

# The MILLING WORLD

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OF THE GRAIN and FLOUR TRADE.

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## ACCIDENTS IN MILLS AND THEIR PREVENTION.

OUR German contemporary, "Die Muehle," has an article upon this subject, from which we translate the following: "Prevention is better than cure," is an old proverb that will bear constant repetition in manufacturing establishments. A compilation of the causes which produce the largest number of accidents in flouring mills, may find a place here, together with the various methods employed to give the necessary protection to the employes. Of course any such attempt will be incomplete; if the task on hand related to safety appliances only and their construction, it would be comparatively easy; the difficulty lies in the fact that the protective measures must not in any way interfere with the successful operations of the plant; and whoever attempts to pass a judgment on the feasibility of certain protective measures, must have a thorough and practical knowledge of milling. The design of a plant will give sufficient indication to a man who possesses practical experience, to enable him to form an opinion about the dangers of its separate parts, as well as about the practical application of certain protective arrangements. A theoretical knowledge alone, is insufficient in this connection. The construction of mills, however, and the design of their plant, is so various, that it would absorb the full time and attention of a man to gain merely a superficial idea about the principal mill plans. In addition to this, we must not forget that the whole milling is in, what we may call, a state of fermentation; the changes due to the introduction of rollers, dismembrators, purifiers, etc., are not yet universally explained and accepted. In many places these changes are yet in their experimental stage, and represent an uncertain groping in the dark. It will need a more extensive experience to settle the superiority of one or the other method, and after that is obtained the question of dangers of accident incidental to the system can be determined on an intelligent basis. Meantime the present treatise will serve as a stimulus to others to follow up this all-important subject, so that the protective measures, guarding against accident, may keep abreast of the technical development of the milling industry.

Reviewing the accidents in the past, we will classify them according to the separate machines or parts of machines which caused them. First of all we have to consider some general cause, and among these are the employees clothing, which should always be smooth and close-fitting to the body. Everything loose, flying or hanging, should be avoided. The floors of the mill should be kept as clean as possible, for flour dust tends to make them slippery and dangerous on that account. Special care must be taken that oil cups have waste cups or basins attached to the journal, so that no oil drops can reach the floors.

Speaking about the separate machinery, we primarily divide them into motors, transmissions, working machines and accessory machines.

### A—MOTORS.

As almost all mills at present receive their motive power from steam, water or wind, a consideration of these motors will cover the ground sufficiently. Generally all these

motors have some sort of apparatus connected with them by means of which they can be stopped at will. In larger establishments we find in addition, special signal apparatuses by which notice can be sent to the engineer in case of danger. The request of "stop at a moment's notice" can perhaps never be realized, because the factors in motion represent too much weight to be stopped suddenly; it is therefore necessary that means are provided for a sudden stoppage of separate parts of the plant. Care must be taken that any motor or machine which has been stopped, cannot start again by itself in any way, as the most dangerous work is performed during these periods, such as oiling, cleansing and repairing of belts and gearing, and a sudden unexpected starting of the machinery may cause serious accidents.

A place separated from the establishment proper is generally made to contain the wind or water wheels, also the steam engines. The latter especially are benefitted by a separate room, as the flour dust seriously interferes with the cleaning of the machinery, which on this account, needs a larger amount of lubricating oil, more power and is endangered by useless friction. The piston rod and fly wheel should, if possible, be fenced in so that nobody can touch them in any way. Numerous accidents have occurred by the bursting of a fly wheel, and it will be a good policy, if they run at a high velocity, to have a wrought iron band around their flange and to have them boxed in with strong and heavy wood-work to break the force of the flying pieces in case of bursting. Only the engineer and his assistants should have admittance to the engine room, and no stranger should be allowed to remain in it under any circumstances. A sign to that effect should be posted put up in a conspicuous place.

The gates for the water wheels seldom close tightly; little twigs, ice, etc., often tend to enlarge the small openings. In this manner it is possible that the plant can be started at an entirely unexpected time, perhaps just when men are employed at cleaning or repairing, thus causing serious accidents. Besides this the leakage of the gate may cause, during very cold nights, a freezing of the small quantities of water that leak through, in parts of the wheel, thus causing trouble when the machinery is to be started next morning. On this account something should be done in some manner or other which will prevent the access of any water whatever to the wheel when the gate is closed.

The moisture around the waterwheels, and the formation of ice during winter time, will make the approaches slippery and care must be taken to have the necessary guards in their proper places and in good condition to prevent accidents, such as falling into the water or into the wheel, etc.

It has repeatedly happened with wind mills that people have been struck by the wings, this is an accident for which no safeguard can be invented for older mills. New mills will do well to have the wings up high enough so that the lowest end does not come nearer than 6½ or 7 feet to the surface of the ground. Automatic regulators in windmills are necessary for the safety of the employes, as without it the unsteady motion has often been the cause of

breaks in the plant, causing injuries of a more or less severe nature to the attendants.

## MILLING IN ITALY.

We learn from "Allgemeine Muehlen Zeitung" that the construction of mills in lower Italy is undergoing a very extensive transformation. The old burr stones which have been made servicable during twenty centuries, will soon be banished from our mills. New machinery and new systems have been invented, which, in their proper combination and arrangement, speak for themselves. Nobody entertains any doubts that the often described modern system of high milling is not a decided improvement, and that rollers are not in every way superior to burr stones. It remains an open question whether it is more advantageous for Italians to adopt the modern milling system in part or entirely; whether it is good policy to produce a flour of first quality before the demand for it exists; or a large variety of flours of different grades. Especially in regard to color, the higher grades may prove too expensive, while the lowest would perhaps find no buyer at all. The selection of a milling system adequate to the demands made upon it, necessitates the possession of a sound and able judgment and should not be made for the purpose of a mere theoretical advancement of milling; but it must also be born in mind that a more or less complicated system of high milling gives a larger yield of flour from the grain, larger in quantity as well as in quality than the old-time method."

The work of the stones which reduce the kernels all alike and at once, is well displaced by the corrugated rollers, where the grain is first cleaned and then gradually reduced from larger to smaller fragments by a succession of passages through these rollers. The small flour particles, otherwise attached to the bran, can by this process be separated, a labor which stones cannot very well perform.

In Italy the large mills are beginning to understand the spirit of the times. The necessity for a rapid introduction of the new method is appreciated more and more. The small miller finds every day a larger number of his former customers leaving him, because they prefer the roller flour, and even the same brands will command a different price if produced by flat or high milling in favor of the latter. In addition to this the taste of the consumer soon learns to appreciate the superior article, and it will not need a large number of years before the milling industry of Italy will occupy a very satisfactory position.

## RUSSIAN WHEAT TRADE.

Very many more or less statistical accounts exist as to the trade of South Russia, but beyond question most of these are based on figures only, and on simply counting-house facts. The fresh and quite unprejudiced impressions of a keen observer who has been all over the region in question, and who has had extraordinary opportunities of conversing familiarly with Russians who know neither England nor English, and had no motive for the slightest concealment of facts, must surely be of value, and the more so at a time when every movement in the foreign grain trade is of such great interest

and importance to all classes of millers. We have lately come across some remarkable facts relative to Russia and the wheat trade, says the "Miller," which are in a manner lost, being contained in an odd chapter in a newly published work by Mr. Charles Marvin on the famous oil wells at Baku. In this work we have some remarkable jottings by the way on the Russian wheat trade generally. The author is now well known and very widely recognized as an authority on most matters appertaining to contemporary Russia. He is a master of the language, and in the habit, during his wanderings in that vast empire, of conversing familiarly with all sorts and conditions of men. This very obviously has enabled him to collect information entirely beyond the reach of the ordinary English traveler in Russia, for Mr. Marvin does not, we need hardly add, speak only a little guide-book Russian, but has full command of what is admittedly one of the hardest of European tongues to the normal Englishmen, and thus possesses a ready means for extracting the fullest information from the many Russians of all degrees of rank with whom he came into familiar personal intercourse.

But first a word as to Odessa itself. Odessa, as is well known, has derived its rapid growth and present prosperity principally from its wheat exports. Twenty years ago, Mr. Marvin says, the total exports thence were valued at £4,000,000, of which the value of the grain was £3,000,000. In 1882 the grain export alone had swelled to £10,000,000. This expansion—very remarkable indeed—has been in spite of the keen competition of both America and India. To deal satisfactorily with the Russian corn trade would require a volume, but, as Mr. Marvin observes, the subject is important, for a wheat crisis is more calculated to bring about a revolution in Russia than any merely sentimental desire for change. Wheat is still the staple product of this great country, and until but a few years ago, be it remembered, Russia was the granary of Europe. A large proportion of the wheat consumed in England and on the Continent was furnished by Russia. The Russo-Turkish war of 1877-78 seriously affected this great trade, and enabled the United States not only to overtake Russia, but to shoot far ahead. In 1880 the Russian wheat exports fell from 180 million bushels to 104, and although in 1881 this rose to 157 millions the result was due only to the acceptance of ruinous rates. Besides America, Russia has now India for a rival. This was but little foreseen by Russians, for even in 1879, when General Annenkov advocated constructing a railroad to India, one of his arguments was that the new line would open up fresh and expansive markets for Russian wheat.

Now the situation has marvelously changed. Thus, writes Mr. Marvin, the agricultural outlook of Russia cannot be regarded as satisfactory. Good harvests are useless if no market can be found for the crops. The Indian ryot can produce wheat very much cheaper than the Russian moujik, and what is more, the English merchant can take it to market for him at half-a-dozen times less the cost than the Moscow kropets, or even the Jewish intermediary at Odessa. It appears further that a commission recently appointed to enquire into the export

the Russian wheat found that it actually cost nine times as much to get a bushel of wheat away from Odessa, reckoning all charges from the field to the hold of the vessel, as it does a bushel of wheat from the ordinary American outlets. In point of fact, for lack of a proper system of transport, it really costs more to convey a sack of wheat from the Odessa railway depot to the steamer—a distance of a mile—than it does to convey a sack from Chicago to Liverpool. This is the astounding statement made by Mr. Marvin from his personal knowledge of the facts. It is only, therefore, by giving the Russian peasant the poorest price for his corn that it can be sold low enough to cover the exorbitant transport charges, and compete with other grain in the European markets.

Now this evidently, as our authority puts it, is a serious matter; and in his Budget report for the current year, Professor Budge admitted the extremely unfavorable effect of English colonial competition on Russian trade, and thence on Russian revenue. By way of mending matters, he announced sundry fresh protectionist measures; but these are calculated only to benefit the occasional manufacturer, and by no means the mass of the peasant wheat growers.

For years, Mr. Marvin tells us, there has been talk in Russia of improving the railway system, but nothing has been done. A vast amount of work has been done on paper, and that is really all. Professor Budge seems to have fully discussed these economic questions with Mr. Marvin, and allusion is made to the scheme presented by the Duc de Morny for establishing elevators at Odessa and other South Russian ports. Without troubling our readers with details, we may here say that, according to Mr. Marvin, so much time will be needed to get these into working order, even under the most favorable conditions, that during the interval Russia will have still further lost her foothold in the European markets, and *pro tanto*, India and our great colonies will have proportionately gained upon her.

#### WHY GRADES GO DOWN.

In support of the claim that better grades are given by the buyers in the country than are obtained in Duluth, the Pillsbury & Hulbert Elevator company submit the following statement of shipment from stations on their line. All the shipments between certain dates are given, and special cars are not picked out for the purpose of making a good showing:

Station.	Car.	Grade.	Duluth.	Shippers'
Hamilton	8,670	No. 1	No. 2	
Hamilton	4,290	No. 1	No. 2	
Hamilton	8,694	No. 1	No. 1	
Hamilton	4,366	No. 1	No. 1	
Grandin	4,814	*No. 1	*No. 2	
Grandin	7,322	No. 1	No. 2	
Grandin	1,402	No. 1	No. 1	
Manvel	1,584	No. 1	No. 2	
Manvel	3,586	*No. 1	*No. 1	
Manvel	8,660	*No. 1	*No. 1	
Bathgate	2,682	No. 1	No. 2	
Orr	2,898	No. 1	No. 2	
Argyle	7,036	No. 1	No. 1	
Argyle	7,132	No. 1	No. 1	
Grafton	84	No. 1	No. 2	
Grafton	2,054	No. 1	No. 2	
Grafton	214	No. 1	No. 2	
Grafton	7,192	No. 1	No. 2	
Dalton	1,360	No. 1	No. 2	
Dalton	190	No. 1	No. 2	

\*Hard wheat

On the above twenty cars grades were lost on twelve, and not a grade was gained on the other eight. Mr. Pillsbury says the above is the result of the shifting system of grading at Duluth. At the time the above shipments were made Duluth was pretty well filled up with wheat, and had more coming in than could well be taken care of. The grades were stiffened up in order to drive shippers to Minneapolis until the blockade was removed. It is a fact well known among grain men that such practices

are common at Minneapolis as well as at Duluth, says the "Pioneer Press." In the early part of the season when everybody wants wheat, the inspections are very loose and nearly everything that comes in is given a good grade in order to attract shippers. As soon as the tide is fairly turned in the right direction, and the elevators begin to fill up, the inspection grows more rigid, and country shippers who have been buying on the first inspection find themselves getting badly left on grades. It is not to be doubted that after an experience of this kind, shippers will be easily taken again. They protect themselves against this sliding inspection by taking wheat at a price that will make them whole should all their shipments lose grade. Pillsbury & Hulbert say they lost \$40,000 in grades on their line last year. That is doubtless true, but they don't claim to have lost that amount in the difference in price. It is an easy matter to give a farmer any grade he wants, but it is quite another thing when it comes to paying him the price for a high grade when his wheat is below it. He gets no more than the actual market value of his wheat at Minneapolis and Duluth, no matter how high the grade may be.

The men who raise good wheat are the only losers in this kind of business. If wheat that is no better than No. 1 is graded as No. 1 hard, the farmer gets only the price of No. 1 for it and the farmer who has the genuine No. 1 hard gets no more for it than his neighbor did for his No. 1. If the standard of grades was raised instead of lowered the farmer who raised wheat that was actually No. 1 hard, and that would grade in any market, would be benefitted. The farmer who raised poor wheat, of course, would be the loser. Under the present system of inspection, the good farmers of the Northwest—the men who raise the genuine hard wheat—are being wronged, and they have more grounds for complaint than anybody else. It is time they were asserting their rights by demanding a strict system of inspection that will give them the premium on the more valuable grain which they ought to have.

#### TWO WAYS OF MEETING INDIA WHEAT COMPETITION.

Mr. Dudley, formerly U. S. Consul at Liverpool, and President of the New Jersey Board of Agriculture, has been addressing that body on the important subject of India's competition with the United States in the production of wheat. Though he has no facts bearing on the question which have not been repeatedly presented in some form before, yet, says the New York Commercial Bulletin, his recent residence among British merchants, capitalists, agriculturists and railroad men has apparently enabled him to emphasize those facts, and to bring home to our people with greater directness, perhaps, the full significance of just what India competition really means in its future bearings upon the American farmer. One thing he shows clearly enough, and that is, if our countrymen are disposed to underrate its importance, Englishmen are not. Government and private capitalists alike are disposed to extend every encouragement to the development of the India railway system, in the confident belief that with requisite transportation facilities it can only be a question of time when India as a source of supply will render England independent of the wheat fields of the United States. The ex-Consul refers to the rapid growth of the trade within a few years past as going far to justify these anticipations. Thus, in 1879 the wheat exported from that country amounted to 1,056,720 cwts; in 1881 to 7,444,375 cwts; in 1882 to 19,901,005 cwts; while in 1883 it amounted to over forty-four millions of bushels—that is to say, more than half the quantity shipped from the

United States to England in that year. Of this amount so exported from India, England took in 1883, 20,998,110 bushels, other European countries taking the rest. On another point the ex-Consul deserves a hearing. We have got to rid ourselves of the delusion that the Asiatic product cannot compete with ours as regards quality. In quality and yield of flour this India wheat, he says, is equal to the best grown in the United States, and in so far he but confirms the judgment of other intelligent Americans who have had the opportunity to compare and investigate. As to the outlook touching the question of transportation, he emphasizes the fact that British India, with a population of more than two hundred and fifty-three millions, has only about ten thousand miles of railroads; that there are fertile districts three times as large as the State of New York that have not a mile of railroad in them; and that even when there are railroads the charges for transporting grain are about four times as high as here. But this will soon be all changed, as labor can be had there for ten cents a day, making the cost of cultivation in India less than it can be reduced to here by the best machinery. "This," says Mr. Dudley, "is the condition of the grain business of India today. They are our competitors, and have already put down the price. The crisis is upon us, and the question is what can be done to meet it?" Up to this point the ex-Consul is sure of his ground. He but sounds an alarm that has been sounded before, and his statistics, both as regards wheat production, railroad construction and the cheapness of labor in India, will stand the test of examination. But when he ventures from the domain of ascertained facts and assumes the role of political economist, we apprehend he is a trifle beyond his depth. True, he has an off hand solution for the problem of India competition, but it is nothing better than the quack prescription of "creating a home market sufficient to consume our surplus agricultural products in the United States." He thinks it a mere matter of legislation, and all that is necessary is an Act of Congress to compel our fifty-two million people to eat more wheat and corn than they already eat. It is part of his plan to stimulate home manufactures as to bring about a total cessation of foreign importations, so that our people, in the wide area of home industry thus secured, will eat and consume the whole of the surplus agricultural products which we now export. "You would in this way," he says, "at once create a home market for all the surplus products of the farmers. Our farmers would be no longer dependent upon the foreign market, and prices here would be regulated by the supply and demand of the home market only. All that is required is for our Government to pass such laws as will induce our own people to manufacture what we now buy of foreign nations." That is to say, advance the tariff on foreign goods to the point of total prohibition, and thus place fifty-two million of consumers (including the farmers) at the mercy of monopolists. We fail to perceive how this would enable the farmer to "market all his surplus products." If consumers were impoverished by high prices of manufactured commodities, which the withdrawal of competition must necessitate, they would certainly not be in a position to either consume more of the farmers' products or to pay him higher prices for them. Legislation undoubtedly is needed, but to be worth anything either to farmer or manufacturer, it must be in the line, not of additional home monopolies, but of lower duties, so that the manufacturer can find a sale in the world's markets for his home surplus. This would keep our industrial population constantly employed, make glutted markets a thing of rare occurrence and enable the farmer to

participate in the resulting general prosperity. When we reach a basis like this we need have no apprehension regarding India or any other competition.

#### NEW ORLEANS MOSQUITOES.

Parson Heckman, a Dallas clergyman, who enjoys the reputation of being somewhat florid in his language has returned from a brief trip to New Orleans.

"How did you enjoy yourself at the New Orleans exposition?" asked George Steketee.

"The exposition is grand. Everybody ought to go and see it. I liked it very much. The saloons are superb, and the eating is the best I ever had. I just lived on gumbo soup while I was there, but there is one drawback."

"What is that?"

"The mosquitoes? They are the worst I ever saw. You get into all kinds of trouble until you get used to them. They even stop the street cars," replied Parson Heckman.

"Now look here. That is coming it just a little too strong. I've heard of grasshoppers being so numerous as to stop railroad trains, but I draw the line at grasshoppers. Nobody, not even if he is a clergyman, can make me believe that mosquitoes can stop the street cars."

"They do it all the same. You see the mosquitoes attack people on the streets. The pedestrians, of course, are compelled to defend themselves. They strike at the mosquitoes with their hands or try to shoo them away with handkerchiefs, or they would be eaten up. The people on the sidewalks are kept so busy with their handkerchiefs and making motions with their hands, that the drivers, are deceived, and stop the cars every few yards, thinking that the people on the sidewalks are hailing the cars to get on board. A conductor is bounced if he doesn't stop a car as soon as he is signalled. It took a car I was in half an hour to make one block. Most of the passengers got out and walked. That's the way the mosquitoes stop the cars. Of course I didn't mean that the mosquitoes lifted the cars off the track."

"Well, that's something new to me."

"That's nothing. You know Henry Tours. He was in New Orleans when I was there. He got himself into a peck of trouble on account of the mosquitoes. He was in the hands of a doctor for three days, and he walks on crutches yet. You know what a lady's man he is, and how polite he is to the fair sex? Well, the very day he got there a lady on the street waved her handkerchief across the street. Henry immediately went up and began to converse. She hit him a lively whack on the bridge of his nose with her parasol and screamed. Her husband came out of a cigar store where he had been getting a cigar and falling upon Henry, nearly telescoped him with his fist and boot. The lady was only shaking her handkerchief to keep off the mosquitoes. Tours was not thinking about the mosquitoes at the time. Almost every day some prominent visitor from the North is taken to the morgue on a shutter, all owing to the mosquitoes. There are several of them. I tell you they are so quick that a man with seventeen hands could not keep them off."

"Parson, don't you exaggerate a little?"

"No sir, not a bit. I should say there were billions of them to the cubic inch. When I first got to New Orleans, I imagined that some very exciting news had just been received. I saw groups of men who appeared to be laboring under most terrible excitement. They were gesticulating in a most extravagant manner as if they were on opposite sides in politics. I never saw such eloquence either on the stage or in the pulpit. They were really all on the

most friendly terms in the world, and were merely frightening off the mosquitoes."

"Do they bite severely?"

"They are very ravenous, indeed. In fact they bleed a stranger more than the hotel and boarding house keepers do."

"Can nothing be done to abate the nuisance?"

"Every remedy has been tried, but in vain. I heard before I left New Orleans that the city authorities were training pelicans to catch them, but I don't know how that will work. I saw one of the pelicans myself," said Parson Heckman.

"Parson, if you make one more trip to New Orleans, people will believe you are connected with the press."

"That's all right. Let's hunt up a saloon and have a drink."—Siftings.

#### A MISTAKEN EXPERT.

The opinions of Mr. Kains-Jackson on the wheat question, deserve some notice. Much of his reasoning is based upon the idea that it has been demonstrated that, with wheat at the low point which was reached in December, farmers and other holders will not sell. Indeed, by way of emphasis he uses the strong phrase, "can not." This does not happen to be the fact, and any theory, however fascinating, built upon that idea, is therefore apt to deceive. It is the fact, on the contrary, that during the month of December, notwithstanding the astonishingly low price both in this country and in England, the movement of grain continued remarkably large. The bottom price was reached in Great Britain during the last week of November, and in this market by about the 10th of December; but, nevertheless, the receipts of wheat at the primary Western markets, which were 2,600,000 bushels during the last week of November, exceeded 3,000,000 bushels during the three weeks ending December 20th, and only declined in the following weeks when the holiday season had arrived. It does seem to be the fact that shipments from India were materially affected by the decline in price during the latter part of last year. But the movement from California was very large, and, as has been shown, the shipments from the farms to the primary markets at the West continued very large, notwithstanding the extreme low price. Moreover, the exports of wheat from this country during the month of December were 8,261,000 bushels, nearly 60 per cent larger than in December, 1883, and larger than in December, 1882. In the light of such facts, it must be admitted that Mr. Kains-Jackson's theory is built upon a most uncertain foundation.

That theory is that the world had ascertained at last a definite bottom price for wheat, below which producers "will not sell," and therefore the price will not go, so that, whenever that figure is approximately reached, speculators can afford to buy with a certainty of early profit. Now it is true, as has been known all time, that whenever a product of universal consumption reaches the lowest point known for a century, those holders who feel able to hold will decline to sell, and those consumers who are wise will take care to provide themselves without waiting much longer. But the course of the markets in December, 1884, does not prove that any fixed bottom price has been discovered, as the English writer reasons, nor does it afford any evidence whatever that the price may not go still lower before the present crop year has closed. The stock of wheat on hand is large. Theoretically it might be a good thing for the world to carry wheat enough for at least six months' consumption, from year to year. But that would involve an employment of a vast sum of money in the permanent but almost useless business of carrying wheat, with the certainty of an entire loss of interest on all money so employed. It is toler-

ably certain, therefore, that the world will not carry much more wheat than is found absolutely necessary to protect local markets from scarcity.

The large supply which has accumulated on account of the unusual crop last year, and the failure to market, all the wheat grown in this country in 1883, may be held with a certain confidence so long as there is a probability that the low prices will cause a material shrinkage in production. Reports are constantly circulated that the acreage in wheat is, or is to be, greatly reduced, and so long as these reports influence the minds of holders, selling may be sufficiently restricted to permit the present or even higher prices to be maintained. But if it should become probable, at any time during the next five months, that the world's supply of wheat grown in the year 1883 will exceed its requirements for a year, then there will be a strong desire to sell a large part of the wheat now carried.

If the English writer should happen to see that state of things arrive, he would be quickly undeceived as to his theory that a definite bottom price for wheat had been discovered.

Moreover, the changes which are constantly going on in the cost of transportation will have much to do with this matter. Events in Egypt have recently caused an advance of 50 per cent. of freights by way of the Suez Canal, and this has just the same effect upon shipments from India as a decline of ten shillings to the quarter in price in the European market. On the other hand, the railways of the United States have recognized the fact that the pool rates cannot be maintained. If an open and vigorous war of rates should commence, for some time, at least, the cost of transporting grain from the interior to the seaboard would be very low, and the effect upon foreign markets might be great. The building of too many steamships, which has so reduced ocean freights that at one time within the past year grain has been transported virtually for nothing, will also affect any theory as to the future price.—Commercial Bulletin.

#### THE PROPORTION OF WHEAT TO OTHER PRODUCE.

Wheat having become a drug in the market, the "Shipping and Commercial List" is moved to ask whether too much wheat is not grown. The question as to how farmers can use their land most profitably has excited much discussion, the most important contribution to which has been a paper published by Mr. Dodge of the Agricultural Bureau at Washington, wherein the ground is taken that more wheat is grown in the United States than is either desirable or profitable. He maintains that farmers ought to raise less wheat and devote more attention to growing other products that would not only command a readier market but would prove more profitable. The population of the country has doubled in about twenty-seven years, and yet the area of land devoted to the cultivation of wheat has been increased two-fold in less than fifteen years. Since the requirements of the present population could be readily supplied by reducing the present area of the wheat belt at least twelve million acres. Mr. Dodge recommends that this land should be devoted to barley, an increase in the production of sugar cane, and other articles that are now imported.

Sugar growing in Louisiana is a losing speculation, and the suggestion is unfortunate. The discussion of the question is no doubt timely in view of the experience that the country is now reaping, and Mr. Dodge's argument is both clever and plausible, but before accepting it, is it not worth while to inquire whether cheap breadstuffs, which mean cheap food, are a disadvantage

and a mistake which need correction? Statisticians may differ as to the causes which have produced the change, but the great mass of consumers do not regard it as a misfortune that they are able to buy flour at five or six dollars a barrel. Furthermore, when an article of food is cheapened its consumption is almost invariably increased, and its cheapness has a tendency to neutralize its superabundance. It is true that through the agency of labor-saving machinery and "bonanza" farming the production of wheat may eventually be overdone, but it will be found a very difficult task to convince consumers that the country is in danger of being injured by cheap bread. Just now it comes as a boon to thousands who feel the scarcity of work and the gradual reduction in wages. The tendency of the past two years has been to cheapen the cost of almost every commodity.

The purchasing power of money has increased in every direction, and its earning power has necessarily decreased in proportion. The cost of living has therefore been reduced, and this has been followed by a shrinkage in the value of the staple articles of food. Clothing is cheaper than it has ever been before in this country, and the laboring man is enabled to supply himself to-day with the necessities of life at a cost that more than fully compensates for the lower scale of wages that is generally being established. When compared with the present price of sugar and other staple commodities, wheat is not abnormally low, and that is the true standard for comparison. Then again, the cost of raising a bushel of wheat under existing conditions is not what it was when the value of everything was upon a much higher plane. Farmers as a class raise such crops as in their judgment best meet their individual necessities, and no doubt when they find wheat-growing less profitable than other products to which their land is adapted they may see the wisdom of making a change, but probably not until then.

#### ON THE PENSION LIST FOR WHEAT.

"Iz you Mistah Hoyne?" asked a frost bitten old negro dressed in an old cavalry jacket, as he entered the room of the commissioner in the custom house. Mr. Hoyne never denied his identity. "I dunno ef I came in de right place or not, but I wuz tolle fo' to see you," continued the relic, at the same time looking around the room. Then he handed the commissioner a slip of reprint, which read as follows: "California raised in 1884 a bushel of wheat for every man, woman and child in the United States." The commissioner asked what of it.

"Iz Californty a pawt ob dese here United States?"

"Yes."

"Her owes 'legence to de gubment?"

"Yes."

Then he pulled a gunny sack from under his coat. When it was unrolled it stretched across the room. He then counted up on his fingers—"Dar's Melindy is one, my ole woman; dars Jackson Van Buren, my olest boy, dats two, an' Aberham Linkum, de last bown, dats tree, an' me, dats foh. Ain't dat right?"

"That's right."

"I want ter ax you fo' to send dis hyar gunny bag by de pos' offis fas' mail way down to Wash'nton an' put it on the pen-shun list for foh bushels Californty wheat. All I ax ob the gubment is fah play—fah play. I nebber got nuffin out of it yet, an' ef de gubment ever gwine to do enny ting for de cullud man now's de time. 'Tain't fur off till do fouf ob March. Ef I ain't tocken keer ob by dat time why—jes sen' back de bag an' I do my own plantin' and raisin'."

#### SITUATIONS WANTED.

*Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.*

##### SITUATION WANTED.

Wanted by a good practical miller a permanent situation, in a small merchant or custom merchant mill. Married man. Has had life experience. Can come April 1st. Good reference. Apply, stating wages given, E. R. HUGHES, Waterville, N. Y. 1517

##### SITUATION WANTED.

By a first-class miller to take charge of a custom and merchant mill, or will rent small custom mill. New York State preferred. For further particulars address MILLER, Box 72, Bradford, N. Y. 1415

#### SPECIAL ADVERTISEMENTS.

*Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.*

##### WANTED.

Traveling salesman, must be a man of experience. Address, GILBERT & JONES, Jamestown, N. Y. 1314

##### WANTED.

A good custom mill to run on shares. Satisfaction guaranteed. Good reference given if required. Address at once. P. O. BOX 44, Lycippus, Westmoreland county, Pa. 14

##### YOU CAN BUY THESE CHEAP.

Three McCully Corn Cob Crushers. The above articles are brand new, in perfect condition, just as they left the factories, and will be sold very cheap for cash. Address S. 30, care THE MILLING WORLD, Buffalo N. Y. tf

##### I HAVE

650 Elevator Cups, 4½x8½,  
700 Elevator Cups, 4x8,  
For which I have no use, and will sell cheap. They were made by W. P. Myer, of Indianapolis, Ind., and are entirely new. If you want a bargain write me. Address, J. S. K., care THE MILLING WORLD, Buffalo, N. Y. tf

##### FISKE'S BOLTING REGULATORS

Keep the bolting cloth clean in all kinds of weather and in handling all kinds of stock. Increases the bolting capacity from 25 to 50 per cent., and prevents making specky flour. No shafting, belting or gearing required. Any one can attach it. I have a few of these devices which I will sell cheap. They are brand new. Send for description and price. Address MILLING WORLD, care THE MILLING WORLD, Buffalo, N. Y. tf

##### PARTNER WANTED.

To remove the machinery of a new three-run mill to a site in a splendid wheat country in northwest Nebraska, with a view to adding new process machinery and elevator. The water power is completed, supplied by springs and not subjected to floods. Mill can be built near railroad track, with the Black Hills and the Northwest for a market. A splendid chance for a man of ordinary means. Address, A. R., care of MILLING WORLD. 18

##### GRIST MILL AND SAW MILL FOR SALE.

This property will be sold to the highest cash bidder at the Court House, Newark, Licking county, Ohio, February 28, 1885. Appraised at \$1,900.00. This property is situated at Chatham, 7 miles Northwest of Newark. Two run of stone. 6½ acres of land, also dwelling, stable, etc. A good 24-horse power engine. Those wishing a bargain or for further information will please address J. I. WRIGHT, Chatham, Licking county, Ohio. 15



##### HOW DOES THIS SUIT?

"Cooch's Bridge, Del., Aug. 25, '84.  
"Messrs. Thompson & Campbell,  
"Philadelphia, Pa.

"Gentlemen: Your machine was sent here against an —, on condition that we should keep the best, and we tried each machine, and are frank to say that if your machine cost us \$500 and the other was offered us as a present we should take yours, as we cannot find a fault with it. The above machine has a capacity of 50 bushels per hour."

We think best not to publish name, but it will be given upon application. Address, THOMPSON & CAMPBELL, Philadelphia, Pa.

##### BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,  
Columbus, Ohio.  
Office and Factory, 5th Street, north of Naughton.



PUBLISHED EVERY THURSDAY BY  
THE AMERICAN INDUSTRY PRESS  
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THOS. MCFAUL, - - General Agent.

#### SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; can be remitted by Postal order, registered letter, or New York Exchange. If currency is enclosed in unregistered letter, it must be at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

#### ADVERTISING.

Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

#### EDITOR'S ANNOUNCEMENT.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

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#### OUR CLUBBING LIST.

**NOTE**—You can save money by availing yourself of the following offers. You can please every member of your family by accepting one or more of the following offers. To save money, and at the same time make the family happy, ought to be the main object of every married man's life. See how you can do this.

#### Take these for Yourself.

THE MILLING WORLD, per year.....\$1.50  
WITH

The Builder and Woodworker	(\$1.00 per year)	2.00
American Architect, weekly	( 6.00 " "	6.50
American Architect, monthly	( 1.75 " "	2.75
American Machinist	( 2.50 " "	3.50
Mechanical Engineer	( 2.00 " "	3.00
American Agriculturist	( 1.50 " "	2.50
The Country Gentleman	( 2.50 " "	3.50

#### Take these for your Family.

THE MILLING WORLD, per year.....\$1.50  
WITH

Harper's Magazine	(\$4.00 per year)	4.50
Harper's Weekly	( 4.00 " "	4.70
Harper's Bazaar	( 4.00 " "	4.70
The Century	( 4.00 " "	4.50
Frank Leslie's Illus. Newspaper	( 4.00 " "	4.00
Frank Leslie's Popular Monthly	( 2.50 " "	3.50

#### Take these for your Children.

THE MILLING WORLD, per year.....\$1.50  
WITH

St. Nicholas	(\$3.00 per year)	4.00
Harper's Young People	( 2.00 " "	3.00

Readers of "The Milling World" will confer a favor upon the publishers, and derive material benefit themselves, by mentioning this paper when opening correspondence with advertisers. Drop us a postal card when you have written to an advertiser, give us his name, and then we will put you in the way of getting the benefit. Don't forget this.

ANY movement that aims at the advancement of any branch of industry of the United States, will always receive the hearty support of THE MILLING WORLD, but for this reason we shall most heartily oppose any scheme which under the pretense of advancing the interest of the country, attempts to benefit a small number at the expense of the majority. This remark is called forth by the receipt of the prospectus for a "National Agricultural, Horticultural, etc., etc., Exhibition, to be held at Louisville, Ky., and asking Congress for the appropriation of the insignificant sum of \$1,275,000—to aid the proper exhibition of the agricultural

work of the country. Now this we call beginning at the wrong end of the "advance" with a vengeance. We have an Agricultural Department in Washington which is supposed to do all in its power to advance the agricultural interests of the United States, but Congress cuts and cuts the appropriations for that department down to figures so low, as to preclude the possibility of a large amount of efficient work; but no "agricultural interest" raises its voice to condemn the practice. The amount of damage annually done to the agricultural products of the country by insects is estimated at many million of dollars, and yet how hard a struggle it is to get the different State legislatures to appropriate perhaps \$2,000 or \$2,500 annually for the services of a State entomologist; a man who has made a life study of insects and who is, on account of such training, competent to devise ways and mean to prevent insect ravages. "Farming interests" on this question are as a rule very indifferent or totally silent. The damage done to our cereals by rust, smut, or under whatever name the diseases produced by the fungi are known, is almost beyond estimation; The different "rots" in other products of the soil are practically unknown; the many diseases of stock need extensive investigations in order to enable us to exterminate them; indeed the number of fields open for the direct benefit of the agricultural interests are many, and are not followed, for the want of appreciation on the part of those very people whose pecuniary interest is at stake; and, as a matter of course, for the want of the necessary money appropriations. If any memorial was circulated asking Congress for the appropriations of \$1,000,000 to be set aside as a fund to pay the services of ten or twelve additional investigations under the auspices of the Agricultural Department, we would hail such a movement with pleasure as a step in the right direction. But when we are asked to favor a memorial asking for such an appropriation simply for a "show," then we say "no!" We fail to see the use of it. American agricultural products do not need advertising to outside countries, for they lead. Our agricultural journals give all the latest advances made to those who want to avail themselves of the opportunities offered, and it seems perfectly safe to assert that anything that a farmer is unable to learn from these papers and at his granger and agricultural meetings, county and other fairs, he will never learn from a cursory visit to a National agricultural, etc., etc., exhibition. The money thus appropriated would undoubtedly aid in procuring eminence to a few and benefit to one city, but barely anything else. It is well known that Uncle Sam's pocket book is well filled and a million dollars will not make him poor; moreover we know that in the development of the human race "ornament" precedes "rise" and that therefore the necessary wire-pulling may bring the scheme to the desired successful issue, but we will also record our protest against the use of the funds of the United States Treasury to aid in any mere "National" exhibition of farming interest.

THE low stage of water in the rivers of the Great Northwest is attracting universal attention; even the abundance of water-power at Minneapolis, which in the infancy of that city was looked upon as beyond question inexhaustible, suffers to such an extent that steam has to be relied upon as a substitute for the failing water due to the low stage of the river. Thus the question of forest preservation is recalled annually to the minds of those directly interested in it, but it seems that the lumbering business weilds the most power, and the indiscriminate destruction of trees around the headwaters and banks of our rivers increases rather than decreases from year to year. By the

time that the majority of people awaken to the danger that threatens them from this cause, it may need a pound of cure to repair what an ounce of prevention would have accomplished before without difficulty. The views of the consumers of water power are, as a rule, not comprehensive enough to grasp the whole situation, and thus they overlook the fact that wide, wide areas of land are contributory to their water power. The planting or deforesting of one little hillside will not make any appreciable difference, yet if often repeated, the aggregate will be sufficient to cause a constant and steady water supply, or a warring torrent with inundations part of the year and low water the rest of the time. Any legislative efforts to regulate the cutting of timber should meet with the most hearty support of the consumers of water power.

THE recently published statistics of the failure of banking institutions in the United States give rise to serious reflections. The total number which failed during 1884 was 121; of these eleven were national, twenty-two state, and seventy-seven private banks. Nineteen of these failures, almost sixteen per cent., have been traceable to frauds perpetrated by the officers of the banks; twenty-five of them, more than twenty per cent., were due to stock gambling, without any intention of fraud. Sixty-seven of the total number of failures thus reported, more than half, have been traced to speculation in some form or other, fraudulent or otherwise. Figures like these are not apt to inspire the country with very exalted notions about the safety of banks as depositories for money; if bank officers are permitted to handle funds, simply entrusted to them, in so reckless a manner as to cause the collapse of sixty-seven banks during one year, it seems that a change of some sort or other is absolutely necessary to protect the interests of the community.

MR. KEELY of motor notoriety has recently found a competitor for fame in France, where an inventor, M. Boutet, claims the honor of discovering a new force by the application of air and water. How he does it, he tells us no more than Mr. Keely, but he promises to exhibit a tramway operated by the new motor at the coming Antwerp Exhibition. The new law of physics, according to which these forces work, is as much a mystery now, as perhaps it ever will be, and until that law is discovered, all sensible people will be justified in denouncing such schemes as illusionary, if nothing worse. The indestructibility of force is so well known a law in physics, and the fact that nothing is able to give out more force than it has received, has been so abundantly demonstrated and is so universally accepted, that it seems almost ridiculous when we hear that such schemes find the support necessary to keep them alive for a short time.

THE name of the O. E. Brown Mfg. Co., Grand Rapids, Mich., has been changed to the Rickerson Roller Mill Company. They are the manufacturers of the Rickerson six-inch roller mill, it being, they claim, the original six-inch roll. They state that their sales since Dec. 15th have been 108 sets of rolls, and that the prospects for a good trade this spring are excellent, as many mills are being changed to the roller system and a large number of new mills built, and that their trade is steadily increasing as their rolls and system become better known. We do not understand that any change has taken place in the personnel of the corporation.

THE "American Engineer" of Chicago is entitled to our thanks for a copy of "Steam Making on Boiler Practice," by Chas. A.

Smith, late Professor of Civil and Mechanical Engineering at Washington University, St. Louis. The author's high authority will insure a hearty welcome to the book, which embodies all the most recent information from all sources, carefully supplemented and condensed into presentable and convenient form by a man of recognized ability, theoretical as well as practical. We will have opportunity later on to refer to this valuable little book which ought to be in the hands of all engineers and steam users. Copies can be obtained by addressing the "American Engineer," No. 182 Dearborn street, Chicago, Ill.

IMPROVEMENTS in transportation, which have long ceased to be looked upon as a novelty in the United States, are slowly but surely forcing their way into conservative Europe. Who, at present, looks upon the transportation by rail of grain in bulk as anything else than a common sense method? Yet in old grain growing districts such as Hungary and Austria, the grain had to be shipped in bags, until very recently. In fact, it is looked upon as a great advance and a sign of progress that the leading railroads of Hungary announced, during January, their intention to build a limited number of cars for the shipment of grain in bulk. Indeed, the world moves, even if it is but slowly.

WE must give credit to English merchants for their ability to grasp the situation rapidly when a possibility appears for the opening of new markets. While the Congo conference is barely concluded, we are told that a British Congo Company has been incorporated with a capital of £500,000 in 100,000 shares for the purpose of building trading stations and depots along the banks of the river. First come, first served, will be the rule here as everywhere else, and English merchants may have established a trade before other nations begin to comprehend the necessity for a movement on their part.

A BILL making it a felony for any corporation, clique or combination, or officers, agents or servants thereof, to attempt to control, limit or diminish the market price of cereals has passed the Minnesota Senate. We suppose that the object of this bill is to stop "corner" business in special, and speculation in general; but it seems to us that such a law will for a long time to come remain a dead letter, along with many other laws designed to meddle with things which are best left alone, as they always regulate in the course of time.

THE month of January has proved rather destructive to mills and elevators by fire. The losses on the former, according to the New York Commercial Bulletin figures, amount to \$174,000, on the latter to \$96,000; total, \$270,000, exclusive of all fires entailing a loss of less than \$10,000, which will add something to the above sums.

BREADSTUFFS are the leading articles of export on the Pacific coast. While the total value of the exports during the year ending June 30, 1884, represented a value of \$45,051,927, the value of breadstuffs alone included in this sum amounted to \$31,622,028.

WILL some of our milling friends who own and operate full burr stone mills, send us a complete line of samples, including samples of the wheat they are milling? Please attach your name, post office, county and state, to all samples sent, and after a time we will write you a letter, promising, however, that under no circumstances, will your samples be shown to anyone outside of our office.

ESTABLISHED 1856.

**EUREKA GRAIN CLEANING MACHINERY | GENUINE DUFOUR BOLTING CLOTH**

OVER 18,000 MACHINES IN USE.

OUR LINE COMPRISSES

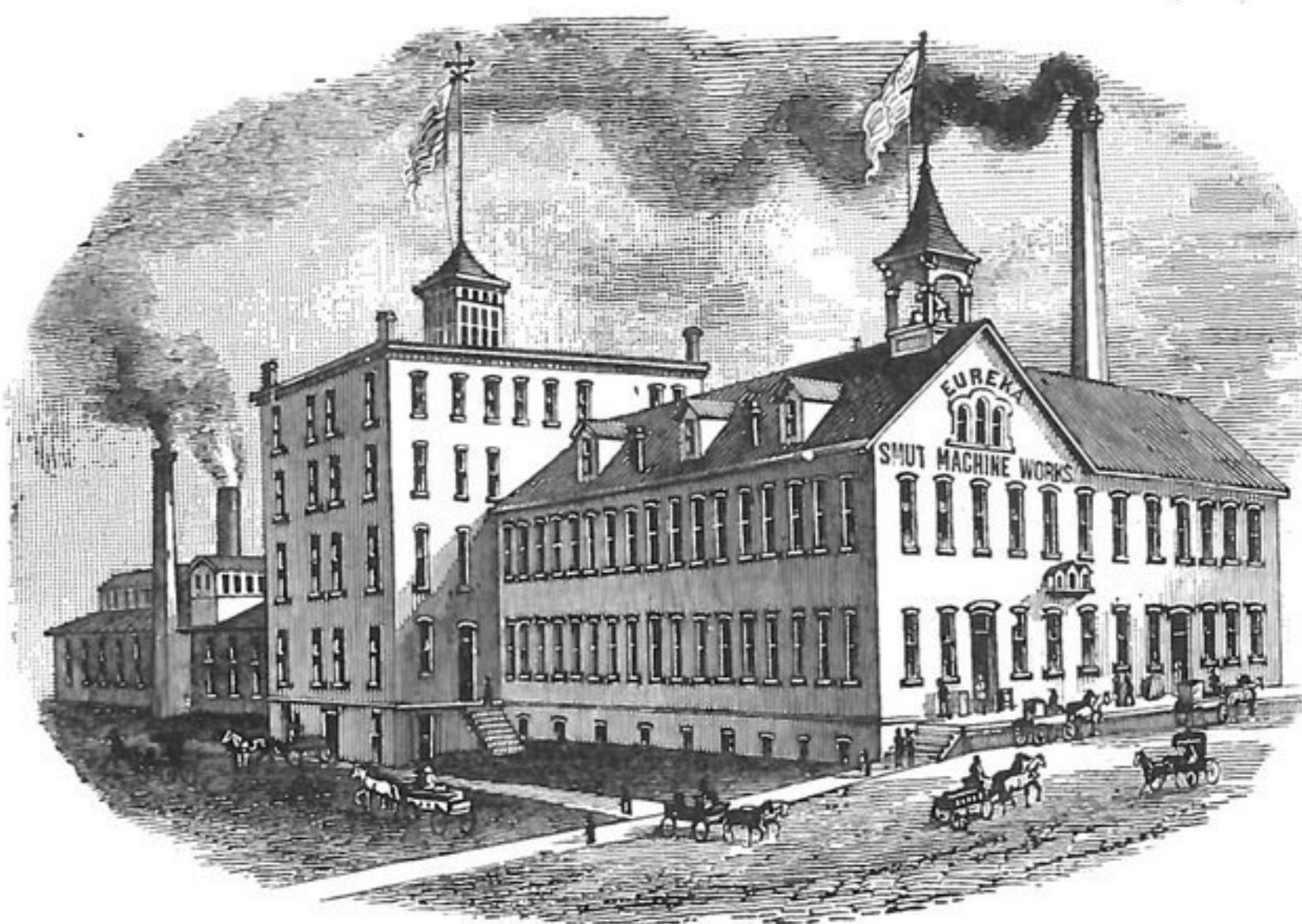
The Eureka Separator,  
The Eureka Smutter and Separator,  
Eureka Brush Finisher,  
The Eureka Magnetic Automatic Separator,  
Silver Creek Flour Packer.

**Our establishment is the oldest, the largest and most perfectly equipped of its class in the world, and our machinery is known and used in every country where wheat is made into flour.**

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SILVER CREEK, N. Y.

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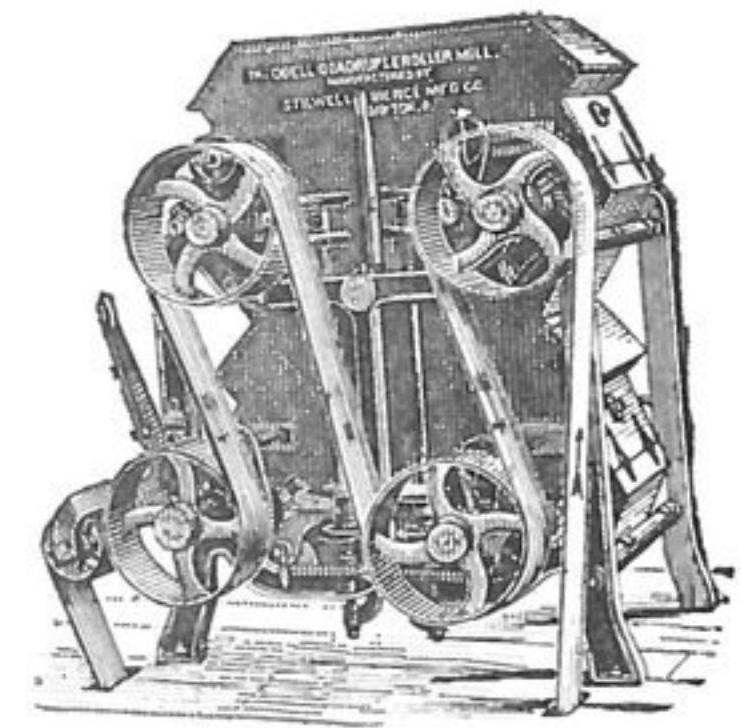
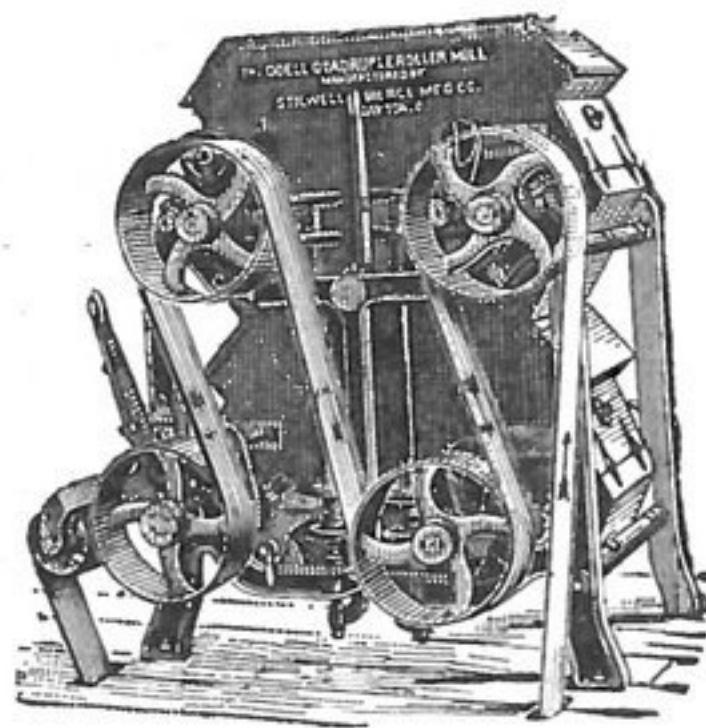
We handle this justly celebrated cloth in large quantities, and can fill all orders upon receipt. For such as may prefer a cheaper grade, we offer our

**ANCHOR BRAND BOLTING CLOTH.**

Guaranteeing it to be equal in every particular to any other cloth on the market, except the Dufour. We have handled it for years, have sold thousands of yards of it, and know it will fully sustain our representations.

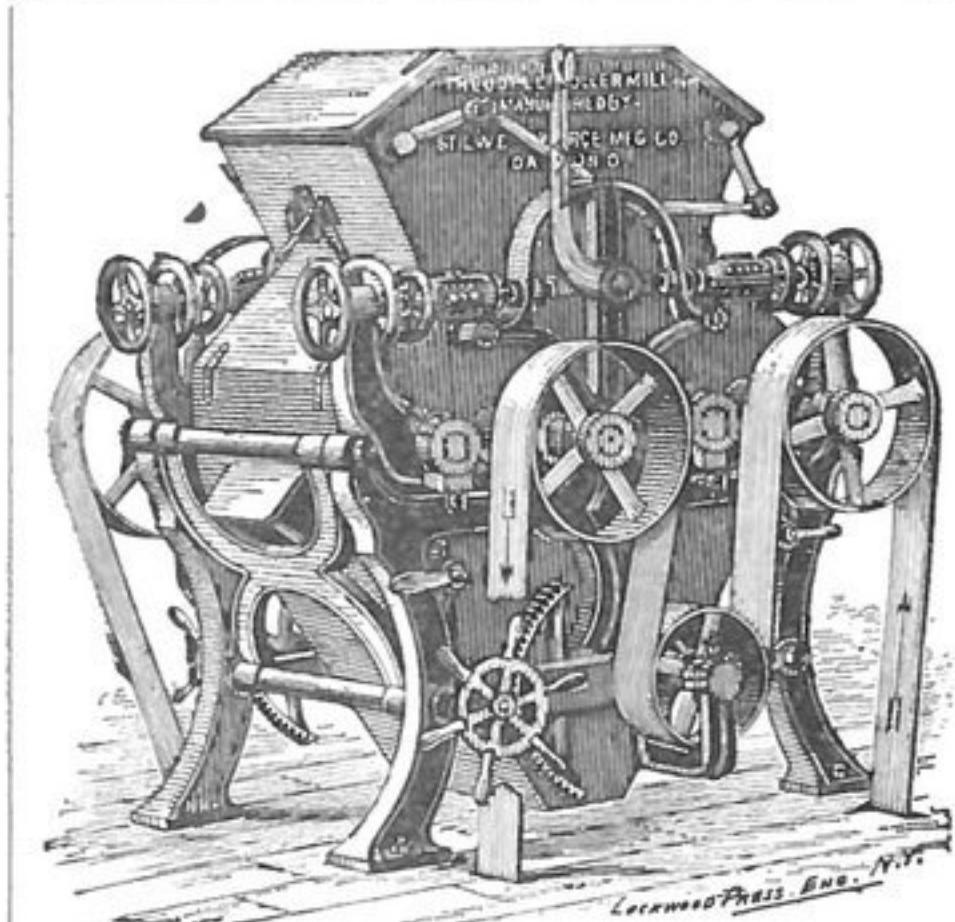
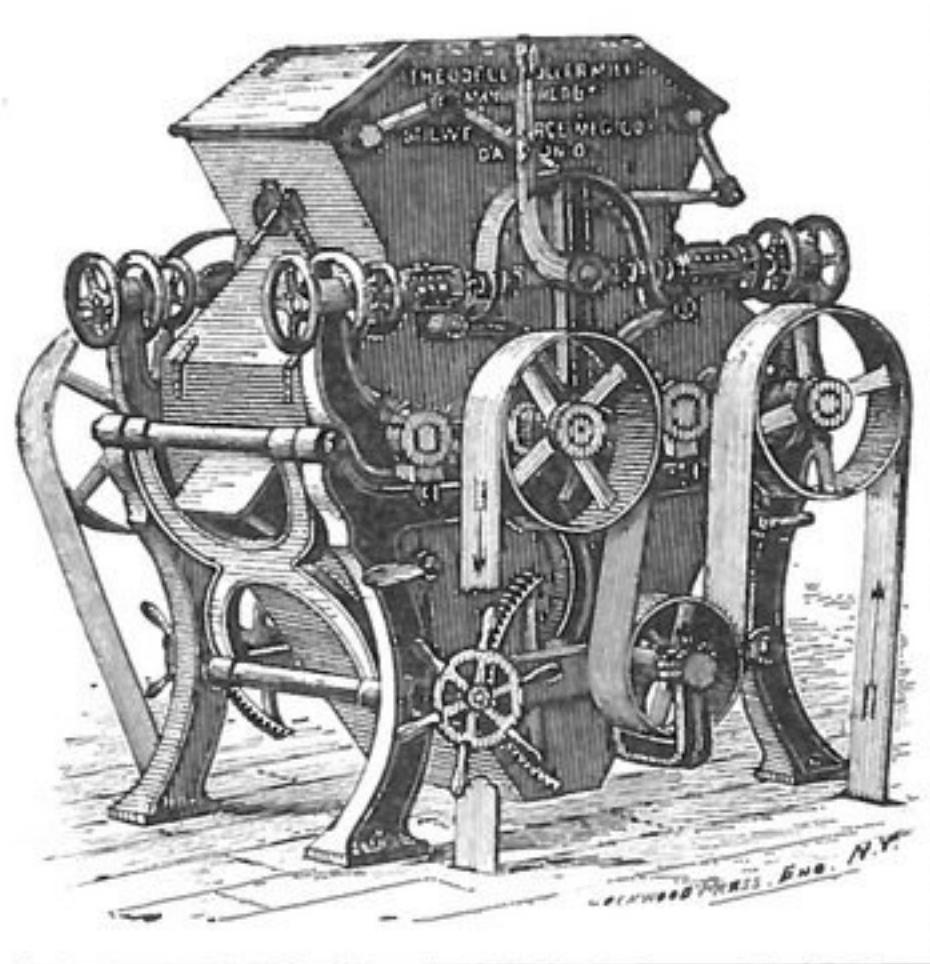
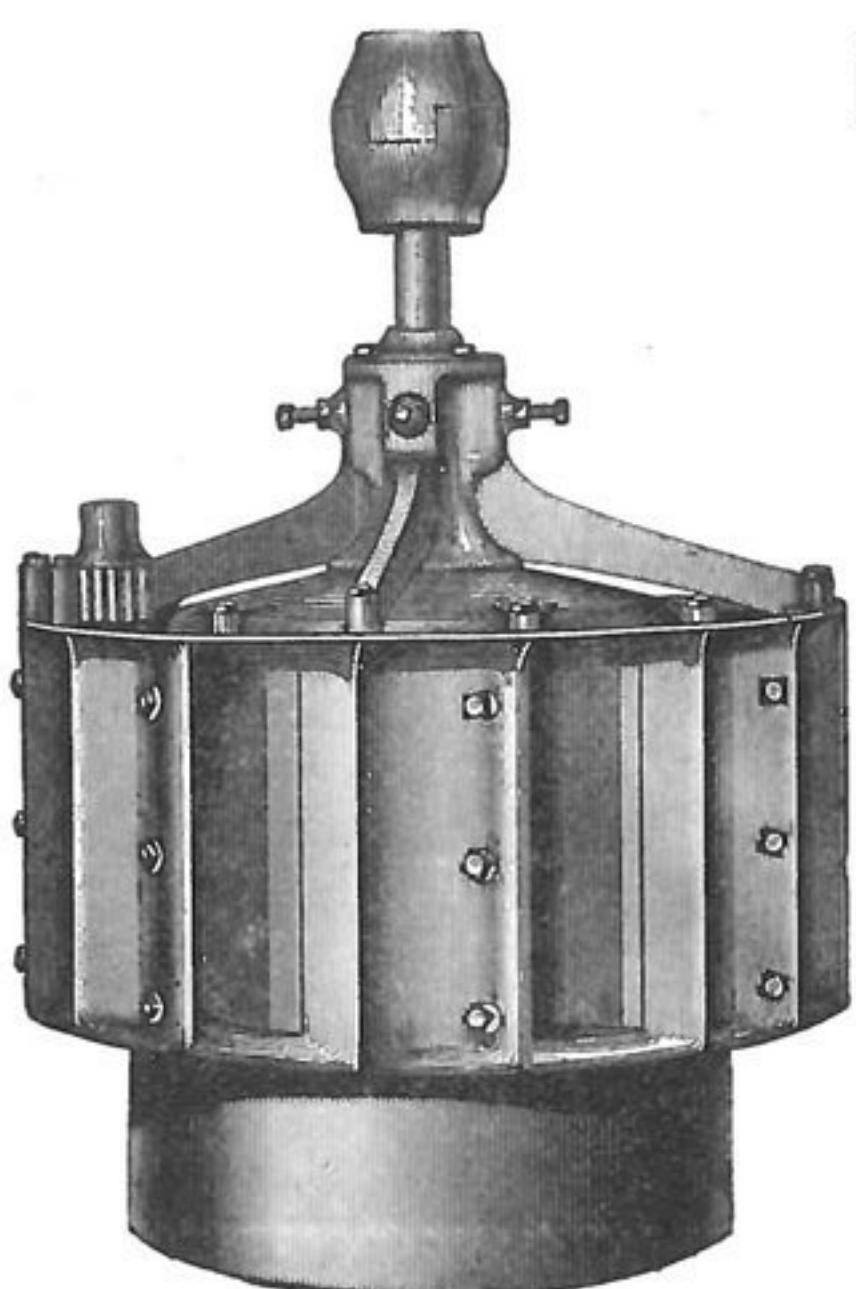
Send For Samples of Cloth, Our Style of Making Up, and Prices.

**HOWES & EWELL,**  
SILVER CREEK, N. Y.



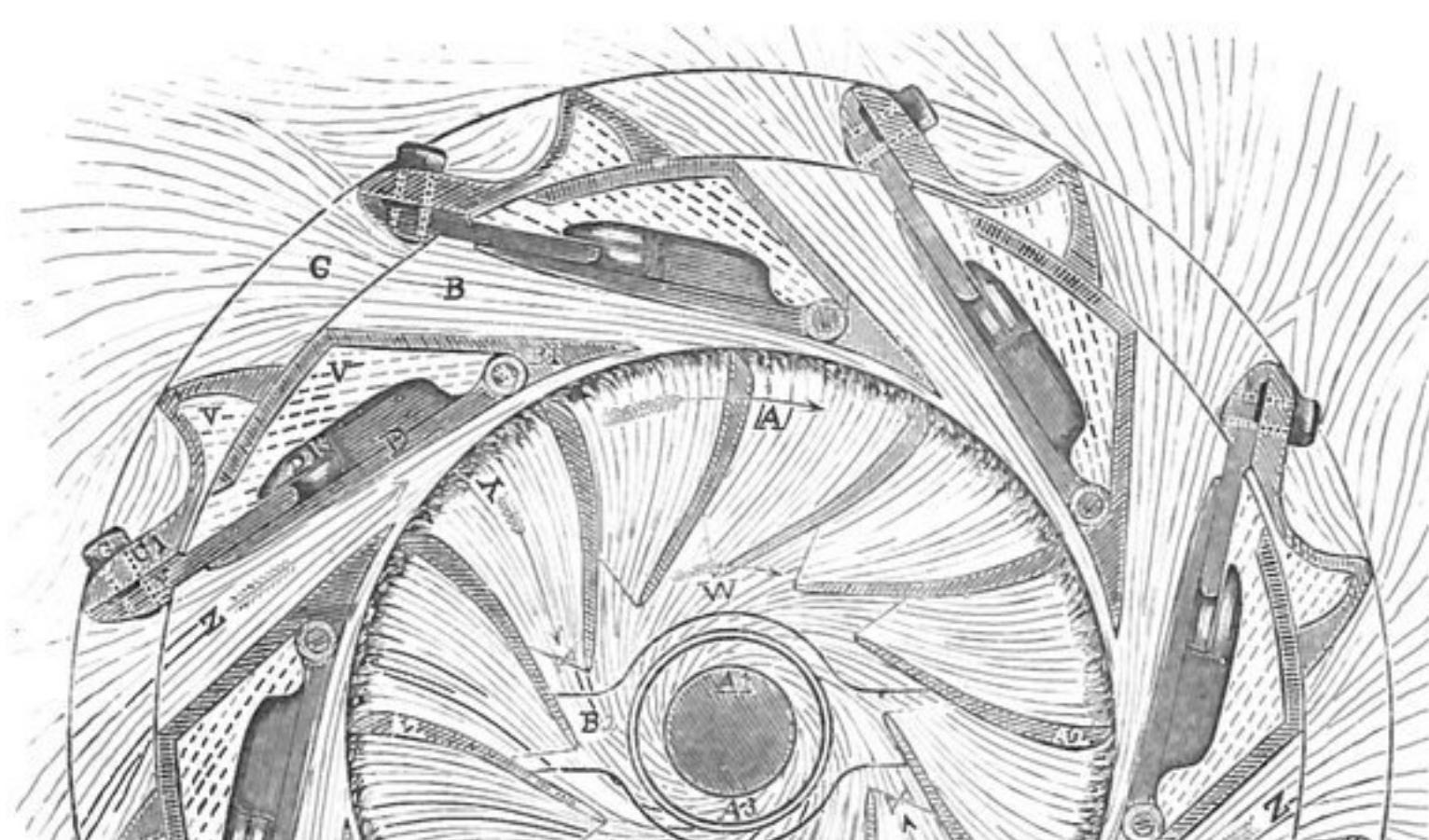
**CUT THIS OUT** and send, or bring it to us, and after you have given us your order for one or more Odell Roller Mills, **WE WILL PAY YOU**, simply for the trouble you have taken to cut it out and bring, or send it to us, the sum, in hard cash, or bank-note, of **ONE DOLLAR**. This coupon is transferable to anyone, but will only be honored upon the conditions named, and at the counting room of

**Stilwell & Bierce Mfg. Co.**  
DAYTON, OHIO.

**THE KEISER -TURBINE-**

Has a combination of more good points than found in any other wheel. Yields the greatest power to be had from the water used, at all stages of gate and has a self-cleaning easy-working balanced gate that closes water tight.

**WOLF & HAMAKER, CHAMBERSBURG, PA.**



GATES ABOUT THREE-QUARTERS OPEN—WHEEL AT WORK.

This cut shows the Keiser Turbine running at three-quarter gate as most wheels are required to work and explains how well the water is left jacked to its work in the long taper chutes, and how it strikes the wheel at its outer edge where the longest leverage is to be had and most power got from the water. No other wheel has such chutes, and keeps them smaller on the inside until closed and yet directs the water to outer edge of wheel.



#### CLEANING-BRUSH FOR MIDDLING-PURIFIERS.

Letters Patent No. 311,622, dated Feb. 3, 1885, to Christian Wehner, of Buffalo, N. Y. This invention has reference to an improved cleaning-brush for the silk screens of middlings-purifiers, whereby a more uniform distribution of the middlings over the screens and a quicker screening action of the same is obtained. The boxes for the shaking screens are provided with detachable silk screens, of the usual approved construction. Above the screens at the top part of the purifier are arranged longitudinal ways for the traversing carriage of the cleaning-brush. The carriage is supported by grooved wheels on ways, and retained thereon by guard-rails that extend above the grooved wheels. On the transverse shaft of the carriage is loosely supported the cylindrical body of the revolving brush, said body being provided with longitudinal recesses into which leather strips are fastened. These leather strips are slitted from the edge inwardly, the slits having enlarged openings at the inner ends next adjoining the body of the brush. Intermediately between the slotted leather strips are arranged longitudinal rows of bristles. The brush receives simultaneously reciprocating and rotary motion from suitable transmitting mechanisms, so as to traverse over the screens. In the passage of the brush over the screens the slotted leather strips, having openings near the body of the brush serve to uniformly distribute the middlings, while the bristles act on the meshes of the screen and open them.

#### GRAIN SEPARATOR AND SCOURER.

Letters Patent No. 311,727, dated Feb. 3, 1885, to John Damp, of Ashland, Ohio. This invention relates more particularly to that class of separating-machines in which an inclined screen is employed in connection with an elevating mechanism, whereby the material which has been passed over the screen is elevated and delivered on the top of the screen, and at the same time gradually moved across the screen, so that the material in passing from the inlet to the outlet side of the machine is repeatedly elevated and caused to flow over the inclined screen. The object is to improve the construction of this class of machines, whereby the grain is freed from the dust, chaff, and other light impurities by means of air-currents passing through the machine, and to combine therewith a suitable scouring and cleaning device, whereby the wheat or other grain is thoroughly scoured and cleaned before leaving the machine. The frame or casing of the machine is composed of the upright posts, horizontal cross-pieces and suitable boards secured thereto, the whole forming a tight casing. The inclined screen is as usual, covered with bolting or wire cloth, and arranged in the casing and extending across the machine. Inclined guide-boards or angle plates are arranged near the tail end of the screen and secured to a board extending across the tail of the screen. The guide-boards are inclined in such a direction as to reflect the material toward the discharge side of the casing or machine, whereby the material is gradually moved from the receiving toward the discharge side of the casing. Elevating mechanism is arranged in the casing with its ascending and descending sides on opposite sides of the inclined screen. The elevating mechanism consists of endless belts or chains and buckets fastened thereto. The chains or belts run around pulleys or sprocket-wheels

arranged in the corners of the casing, so that the ascending and descending sides and bottom portion of the elevator are parallel with the upright sides and bottom of the casing. The buckets of the elevator run close to the bottom of the casing, so as to pick up the material which falls on said bottom and elevate the same. A scouring cylinder is arranged below the tail end of the screen, and rotating in a concave or semi-circular trough. The cylinder is composed of circular plates which are each provided with a central hub or collar, and are secured to a shaft by set-screws. The circular plates are provided with grooves or corrugations which are arranged radially, or nearly so. The corrugations are arranged on both sides of the plates, and extend to the periphery of the plate. The trough is provided with sectional scouring-plates, having radial corrugations or grooves on both sides, similar to the corrugations on the circular plates. The plates are semi-circular in form, and rest with their outer peripheral edges in contact with the concave surface of the trough. The plates are provided on their ends or corners with lugs or ears, which rest upon the upper edges of the trough, and are secured to the trough by bolts or screws passing through the lugs. The plates are arranged transversely in the trough between circular plates, which latter revolve freely in the spaces between the plates. The upper edges of the plates are concaved, to allow other circular plates with their hubs to extend in the trough between them so that the peripheral edges of the circular plates will be close to the concave surface of the trough, and the corrugated faces of the plates will be opposite the corrugations on the plates. A brush-cylinder is secured to a shaft and arranged on one side of the scouring-cylinder and parallel therewith. A concave corrugated plate is arranged below the brush and in contact therewith. The concave is preferably composed of a number of round rods or bars, fastened at their ends to curved end plates, which are secured to the casing of the machine. The upper edge of the concave is preferably connected to the upper edges of the concave trough between the scouring-cylinder and the brush cylinder, whereby the material as it escapes from the scouring-cylinder is caught by the brush and conveyed between the brush and concave. The concave is connected at the discharge end of the machine with a discharge-spout. The rods or bars are preferably indented or grooved on their upper surfaces, whereby the ends of the grains can be acted upon by the brush and are arranged close together so as to prevent the kernels of wheat from passing through them. A shaking-shoe is arranged above the casing of the machine and secured to the frame by spring-arms. The shoe is provided with one or more screens, whereby the grain is freed from sticks, straw, cockle, or other foreign matter, before entering the machine. The feed-spout of the machine communicates at its upper end by a spout, with the shoe, and at its lower end with an air-trunk, through which the grain passes before it is delivered into the machine. From the air-trunk the grain drops into the spout and through an opening in the casing onto the bottom of the machine. The air-trunk extends upward and across the machine, and is provided with a chess-hopper, which communicates with the eye of a suction-fan. A similar air-trunk is arranged on the discharge end of the machine and communicating at its lower open end with the discharge-spout. This air-trunk also extends upward and across the machine, and is provided with a similar chess-hopper, which communicates with the eye of the fan on the opposite side of the fan-case. The air-trunks are provided with suitable valves or dampers whereby

the air-currents through the air-trunks are regulated and controlled. An opening is formed in the casing in rear of and below the head of the inclined screen, and openings are formed in the top of the casing above the screen, and communicating with the eye of the fan by spouts. These openings are regulated or entirely closed by valves. The driving-pulley is mounted on one end of the shaft of the brush-cylinder, motion being communicated to the pulley by a suitable driving-belt. The material to be separated is fed upon the shaking-shoe, and any straws, sticks, or other foreign matter contained in the grain are separated therefrom by the riddle or screen, and the grain passes through a spout into the feed-spout. From the feed-spout the grain enters the wind-trunk, where the light grains or chaff are caught by the air-current in the trunk, and are carried upward in the air-trunk and deposited in a chess-hopper. The grain that drops out of the air-current falls onto the spout and into the machine, and is carried upward by the elevating mechanism, and deposited upon an inclined screen. From this screen the grain falls into the scouring-trough, where it is subjected to a constant rubbing or scouring action between the corrugated surfaces of scouring-cylinder and trough. The material is then carried by the action of the scouring-cylinder to the outside of the trough, and is caught up by the brush-cylinder and conveyed by the action of the brush between the brush and the concave, and deposited on the bottom of the machine. This operation is repeated a number of times as the material is gradually moved from the feed side to the discharge side of the machine by the angle-plates or inclined boards. The material which has reached the discharge end of the machine is discharged from the brush-cylinder and concave upon the discharge-spout, where it escapes into the air-trunk, and the outer fibre of the grain and any other impurities contained in the grain which have been removed by the action of the scouring-cylinder and brush-cylinder are carried upward by the air-current in the trunk. The clean grain is discharged at the bottom of the air-trunk. By means of the openings in the casing, and the openings which communicate with the eye of the fan, a current of air is caused to circulate through the screen, and the grain as it descends on the screen, is subjected to this air-current, whereby the grain is cooled and the fluff of the berry removed.

#### MIDDLING-PURIFIER.

Letters Patent No. 311,808, dated February 3, 1885, to Eli T. Butler and Thomas McFeely, of Philadelphia, Pennsylvania, assignors to said McFeely, Samuel E. Griscom, and Walter Griscom, all of same place. This invention consists of certain improvements in that class of cleaners and separators in which the crushed grain is fed from a primary rotating screen having a graded mesh onto a series of secondary shaking screens, each having a mesh to accord with the grade of material supplied thereto, the objects being to dispense with the use of brushes or other cleaners on these secondary screens, and to so regulate the blast as to insure the most effective separation. The casing of the apparatus has in the upper end a fan box and bearings for a longitudinal rotary screen, of any of the usual constructions and clothed with gauze of different degrees of fineness, there may be but two grades or more than three grades. In the casing beneath the rotary screen are three transverse shaking screens, one for each gage of gauze on the rotary screen, and in this portion of the casing are vertical partitions, which divide it into three independent chambers, one for each shaking screen, and each of these chambers beneath the screen is further subdivided by partitions into

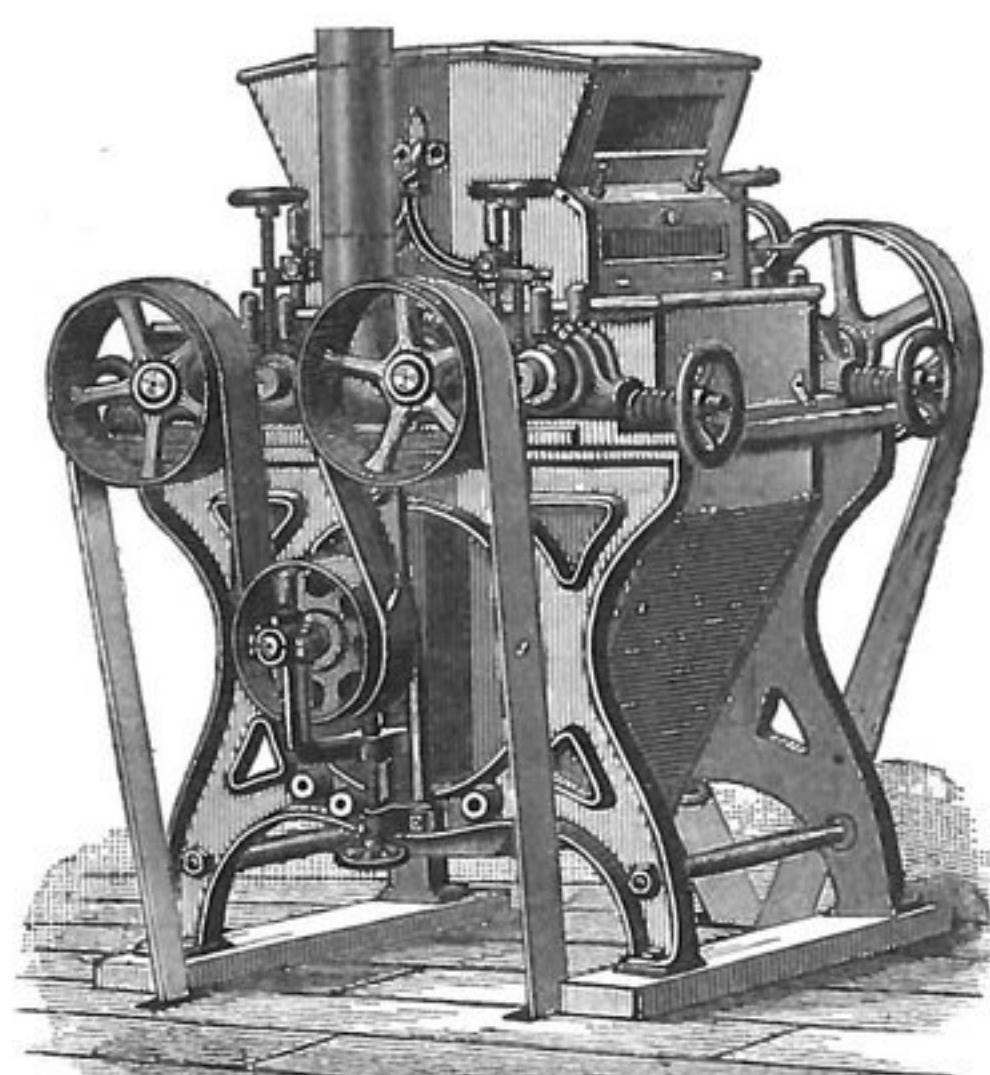
three chambers, each of which has a suitable discharge-spout and conveyer. The fan-box communicates with each of the screen chambers through openings provided with valves, the valve mechanism of each chamber being independent of that of the others, so that the blast through any one of the screens may be controlled without affecting the blast through either of the others, the air entering openings in the casing beneath the shaking screens. Each shaking screen is furnished with gauze one grade coarser than that of the section of the rotary screen from which it receives its supply of material. The separation effected by the rotating screen is a primary separation into different grades, while that effected by the shaking screens is a secondary separation of each of these grades into different qualities, the cleanest particles passing at once through the screens into one series of chambers, other particles not so clean being carried along on the screens and discharged into other chambers, and still others into tailing-chamber, while the light particles and fluff are carried up by the blast into the fan-box, the strength of blast being regulated by valves. The providing of the secondary screens with gauze of a grade coarser than that of the section of the rotating screen which supplies the secondary screen and the maintenance of an upward draft of air through said secondary screens, are the important features of this invention, as the desired separation of the material can be effected without risk of clogging the secondary screen, and without the necessity of using brushes, beaters, or other devices for keeping the screen clean. The separation of the material on the secondary screen by gauze of coarser mesh than that through which the material passed in the primary screen is due to the fact that in the secondary screen the material is simply subjected to a shaking action, and is under the influence of a lifting blast of air, whereas in the primary or rotating screen the material is lifted and allowed to fall, so that it is driven through the meshes of the gauze with which said screen is covered. Owing to the system of partitions, each screen is contained in a separate blast-chamber, so that the force of the blast through each screen may be regulated independently of the others to suit the particular grade of material which is being fed to that screen, the effective and equable action of the blast being insured. Owing to the arrangement of the fan-box, air-inlets, and partitions, all the air which passes through the rear portion of each shaking screen, must first pass over the top of the partition beneath said screen. This causes a blast along the bottom of the screen and serves to separate from the material passing through the head of the screen the lighter particles, which are carried over the partition and deposited in a chamber. A forced blast beneath the screens may be substituted for the induced blast, if desired, the same principle of subdivided chambers and independent valves being adopted. The shaking screens are hung to elastic arms, the upper ends of which are adjustable on segmental carriers, so that the arcs in which the lower end of the arms travel may be varied as the desired shake of the screens may suggest, the shaking movement being effected by eccentrics on the driving-shaft.

#### CENTRIFUGAL REEL.

Letters Patent No. 311,828, dated February 3, 1885, to William D. Gray, of Milwaukee, Wis. This invention relates to that class of flour-dressing or bran-dusting reels commonly known as "centrifugal reels," which consist, essentially, of a revolving reel or cylinder and a series of internal longitudinal beaters or blades, which are commonly driven at a high rate of speed

(Continued on page 232.)

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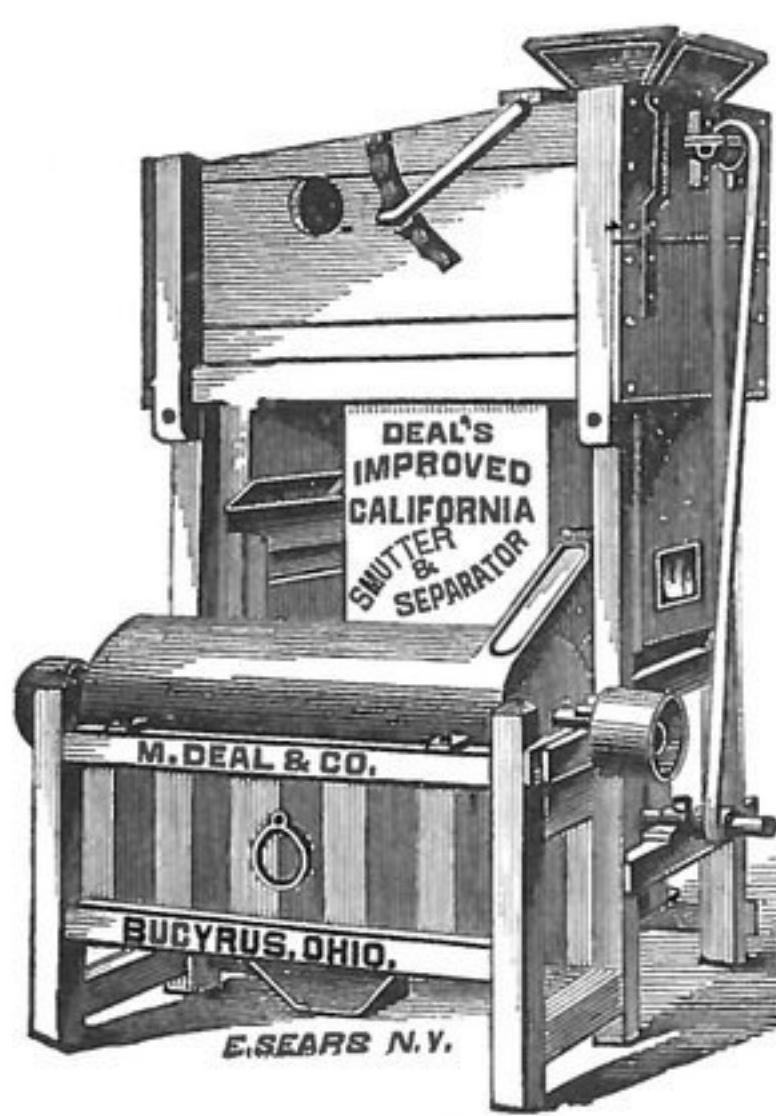
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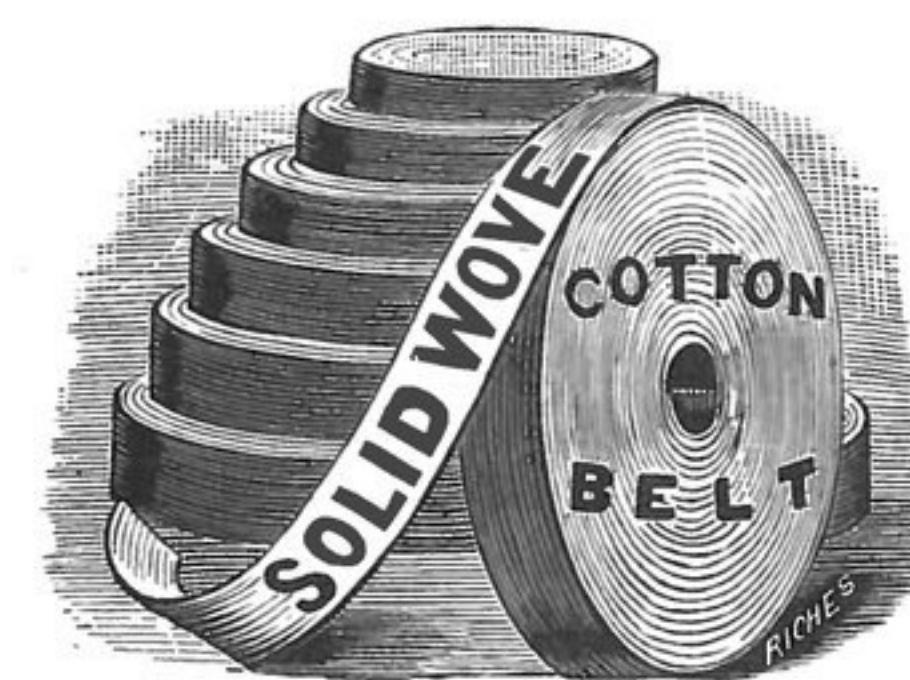
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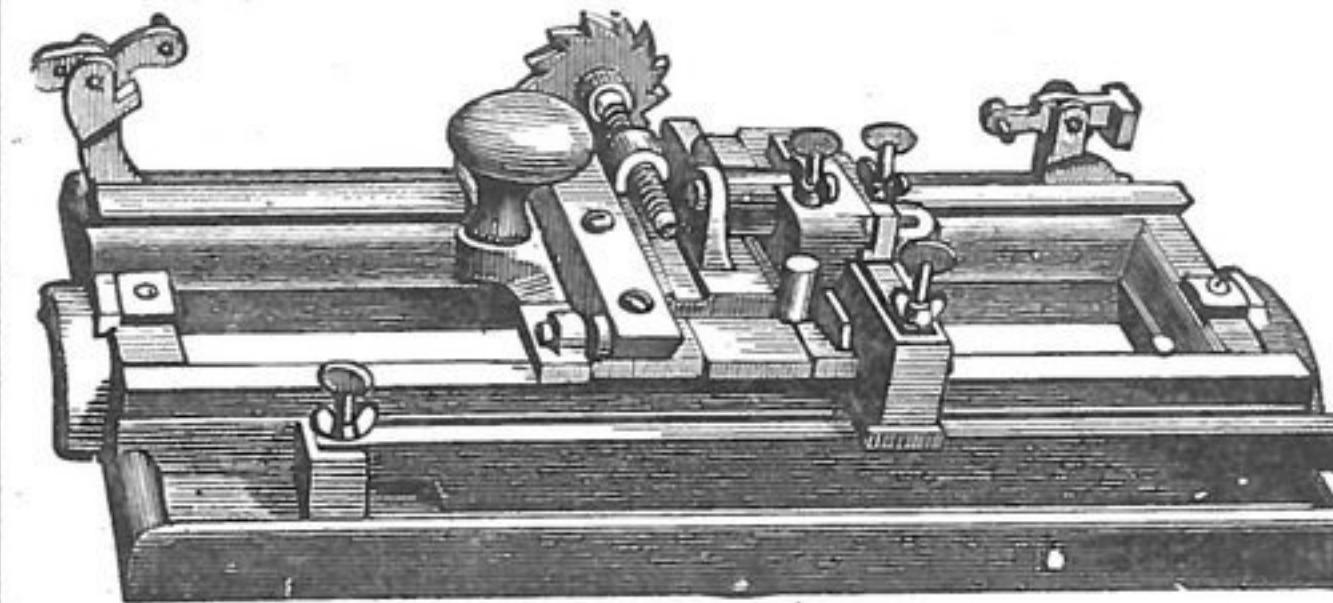
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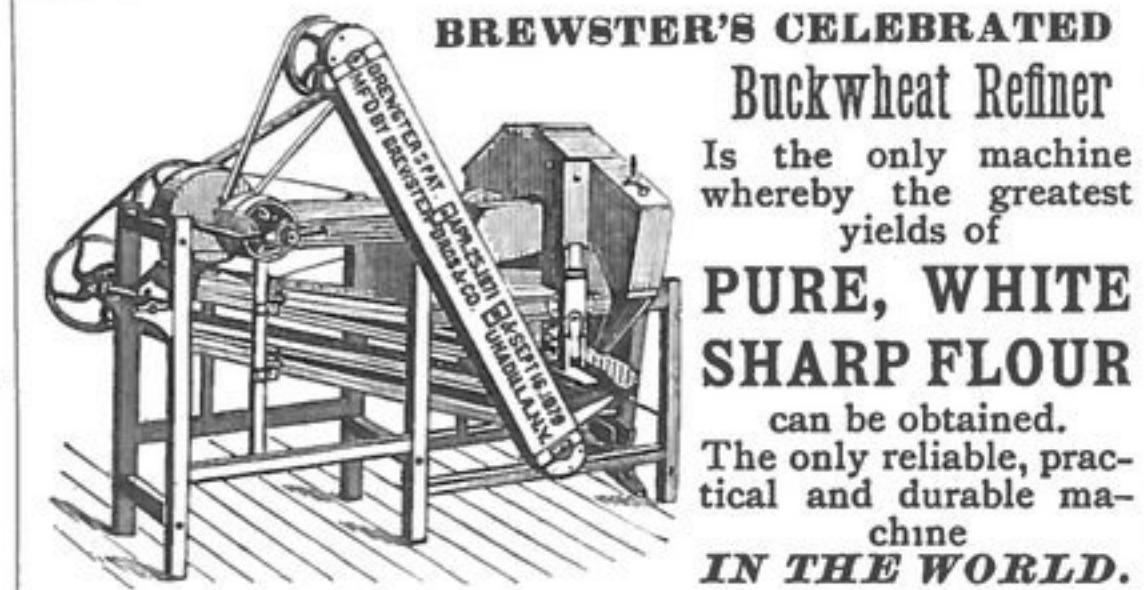
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## NEW INVENTIONS.

(Continued from page 230.)

for the purpose of throwing the material under treatment violently against the interior of the bolting-surface, and for producing an outward blast or current of air through the same. The invention relates to improved means for removing from the body, before it enters the reel, "dough-balls" and other coarse foreign matters; to means for directing the body toward the bolting-surface and maintaining it in proximity thereto, and to peculiar driving mechanism. A rectangular frame is provided, adapted to support the operating parts, and suitably closed or incased to form a body or chamber. The main shaft passes horizontally through the upper portion of the body, and is provided with radial arms or equivalent supports, bearing at their outer ends longitudinal blades or beaters, which are ordinarily of a slightly-curved or spiral form. A horizontal cylinder or reel is covered with bolting-cloth or equivalent pervious material, and arranged to encircle the series of beaters. This reel is encircled at or near its ends by flanges, which will be sustained and driven by means of pulleys, bearing thereunder, the pulleys at one end being ordinarily provided with gear-teeth engaging corresponding teeth on the flanges, for the purpose of imparting a positive motion to the reel. The pulleys under one or both sides of the reel are mounted upon a longitudinal shaft, which is projected at one end of the frame, and provided with a driving-pulley. The material to be treated is delivered into the head of the reel through a feed spout, in the usual manner. For the purpose of excluding the dough-balls there is mounted within the head of the reel a perforated conical basket or screen, into which the material is delivered by the feed-spout, and through which the material is compelled to pass in order to enter the reel. This basket is arranged centrally around the beater-shaft, being secured either to said shaft or to the head of the reel, so as to receive a rotary motion therefrom. The basket or screen is arranged with its larger end outward. Being thus arranged the free and fine material will pass readily through its meshes or openings, which are quite coarse, into the reel, while the dough-balls and coarse impurities too large to pass through the cone roll down the inclined surface, and are discharged, outside of the reel. Being thus discharged, the dough-balls descend into the usual passage, at the end of the machine. In this passage is located an inclined screen, consisting of perforated sheet metal, wire cloth, or equivalent material. This sheet is joined at its lower edge to the side of the machine, so that the dough-balls lodging thereon will be retained, while the finer material will pass through into the speck-box or receptacle below, from which they are commonly spouted to the elevator that feeds the reel. For the purpose of permitting the convenient removal of the dough-balls, a discharge opening is made in the side of the machine opposite the lower end of the screen, and closed by means of a door, through which the balls may be discharged. Hitherto it has been customary to construct the reels for the present class of machines with open ends, having large openings therein through which the air could freely circulate. In order to avoid the difficulties incident to such construction, this inventor closes both ends of the reel by tight heads or plates inserted therein. The plate or head at the head of the reel is perforated only to receive the cone, through which the material is introduced, while the plate at the tail of the reel is completely closed, except at the periphery, where it is provided with small openings, through which the coarse material or tailings may escape. In practice it is

found that by practically closing the two ends of the reel its action is improved, and the capacity of the machine greatly increased. Referring next to the deflectors for causing the meal and air to be thrown outward, subject to the action of the beaters and the bolting-surface, sheet-metal cones are mounted centrally around the beater-shaft with their faces toward the tail of the reel. The cones may vary in diameter at the base; but it is preferred to extend them outward to the inner edge of the blades or beaters—or, in other words, to a point but a few inches from the inner surface of the bolting cloth. Referring next to the means for imparting the rotary motion to the reel and the beater-shaft. The beater-shaft and the shaft of the upper conveyer, mounted in the base of the machine, as usual, are provided, respectively, with sprocket-wheels. A driving-chain engages with these sprocket-wheels, and also with the sprocket-wheel of the pulley through which motion is communicated to the reel. The chain is acted upon and subjected to the proper degree of tension by means of an idle-pulley, sustained by a journal on a slotted adjustable plate secured to the main frame by bolts. The position of the idler may be varied in such manner as to admit of the driving-chain being passed over the inside of the free driving-pulley, or over the outside of said pulley. The idler will serve in either case to keep the chain in the required position, and to maintain the proper tension of the same. The chain may be so applied that the reel or bolt will be caused to revolve in the same direction as the beaters, but, owing to the relative size of the driving-wheels, at a slower rate of speed. Or the driving-chain may be so applied that the reel will be revolved in the opposite direction from that in which the beaters are turned. This adaptability of the machine for a reversal of the motion of the cylinder is advantageous in that it permits the motion to be adapted for the successful treatment of different kinds of material, and of material under different conditions. For the purpose of removing adhering material from the exterior surface of the reel or bolt, a rotary brush is provided extending lengthwise beneath the bolt. This brush, which may be constructed in any suitable manner, has its shaft mounted in bearings at the ends of the main frame, and is driven by means of a pinion, engaging with a gear-wheel, applied to the shaft of the upper conveyer. Two conveyers are constructed and mounted one above the other in the base of the machine, and separated from each other by return or division boards in the ordinary manner, to permit the separation of the material.

### GRADUAL REDUCTION MACHINE.

Letters patent No. 311,829, dated February 3, 1885, to William Dickson Gray, of Milwaukee, Wis. This invention relates to that class of apparatus commonly known in the art as "gradual reduction machines," designed to effect successive reductions of grain or grain products with intermediate separations or gradations of the material. An oblong rectangular frame, usually constructed of wood is provided, designed to sustain the various operative parts. This frame is constructed of sufficient strength and rigidity to give support to two roller mills which are mounted thereon, and to this end is provided with upright posts or standards at the middle. On top of this frame, at its middle, are mounted two roller mills, one upon each side of the frame work. Each of these mills is of the type known as "double mills." The construction of the rolls, the frame work in which they are mounted, and of the mechanism for adjusting and driving them, may be of any ordinary or suitable character, the construction shown in either of the numerous patents hitherto granted to this inventor for double

mills being applicable in the present case. Each of the double mills is provided with a double hopper, or hopper consisting of two independent compartments, one delivering its contents to each pair of rolls, so that each pair may receive a different product from the other. In each mill the product from the first pair of rolls is prevented from mingling with the product of the second pair by means of an intermediate board. By means of spouts the products from the two pairs of rolls are directed downward centrally into the bolting apparatus below—which will be hereinafter described—the spouts being arranged so that the product from one pair of rolls is delivered toward one end of the machine, while the product from the other pair is delivered in the opposite direction. The double mills are duplicates of each other, one being arranged to deliver the products to one side of the machine in the same manner that the products are delivered from the other into the opposite side of the machine. The arrangement of details for transmitting motion to the two mills will be hereinafter described. For the purpose of effecting the proper separation of the products delivered by the mills, there are in the base of the machine, directly beneath the respective mills, two horizontal or substantially horizontal rotating reels, each being divided transversely at its middle, so that the two ends constitute in effect separate or independent reels, the two divided reels having consequently the same effect and capacity as four independent reels of short length, there being in effect a separate reel for each pair of reducing rolls. The main frame is provided with a sheathing or covering, by which it is converted into a close chamber or body to inclose the reels and confine the dust and flour therein. The sheathing is applied in such manner to the two sides of the machine as to inclose the two reels independently, each reel extending from end to end of the machine, being thus inclosed in a chamber which has no direct communication with the chamber inclosing the reel on the other side of the machine. In this manner a longitudinal space or chamber is left in the middle of the frame between the two reels to receive elevator mechanism. Each of the bolting chests or chambers has converging walls at the base, and contains two horizontal conveyer screws one above the other, with intermediate return boards, to effect the proper separation and gradation of the bolted products, as in other bolting machines. The double reels each consist of a central longitudinal shaft, provided at opposite ends with two series of blades or beaters, and two reel sections, one surrounding the blades at each end of the shaft. The reel sections consist each of a skeleton frame clothed with bolting cloth or other pervious material, and having circular ends sustained upon supporting rolls by which it is caused to revolve. The two reel sections arranged concentrically constitute in action two independent reels. Their inner ends are separated from each other a sufficient distance to admit of spouts extending downward between them from the mill above. Under this arrangement the products from one pair of rolls in the mill will be delivered into one reel section or one end of the reel, while the products from the second pair of rolls in the same mill will be delivered into the other end of the reel or reel section, the material from the respective pairs of rolls being thus delivered into the center of the reel and caused to traverse the same in opposite directions, the tailings from the two products being discharged from the reel at opposite ends of the machine. Each of the bolting chests or chambers has one end divided from the other by means of two vertical transverse partitions, separated from each other to leave an open space between. Each reel has the inner ends of its two sections closed by heads or end boards secured

therein, these heads being provided with central openings, through which feed spouts deliver the material into the interior. The inner ends of the reel sections are extended through vertical partitions into the central space or chamber between them. Each section or end of the reel is clothed with bolting cloth of two grades or degrees of fineness, the section near the inner or receiving end being of fine material, while that near the outer or tail end is of coarse material. This construction adapts each reel to separate the fine flour or middlings, which are to be removed immediately from the machine, from the coarser middlings, which are to undergo further treatment. Two conveyers arranged under each reel section, admit of the fine and coarse products being kept separate from each other and delivered through separate openings in the base of the machine. The arrangement of these conveyers and the mode of effecting the separation of the materials recited above are the same as in the ordinary bolting chests, and are familiar to those skilled in the art. The conveyer and the reel shaft are respectively extended through the heads and partitions across the intermediate space or chamber, so that the driving power may be applied wholly at one end of the machine. For the purpose of conducting the materials in the required manner from the respective reel sections to the various rolls, at the middle of the machine two elevator bolts are employed, and in connection therewith spouts at the base to deliver the material to them, and spouts at the top to conduct the material therefrom to the hoppers of the rolls. These two elevators, consisting of belts provided with buckets, as usual, are mounted vertically in the center of the machine and extended downward between the two reels, being carried at their lower and their upper ends by pulleys, the belts passing through suitable spouts or trunks, as usual. The two elevators are separated from each other by an intervening partition and operate independently. The lower ends or boots of the two elevators are carried downward below the frame, and are supplied with material through spouts leading upward and outward beneath the respective reels in position to receive the coarse middlings passing through the reel, or to receive the tailings, as may be demanded. At their upper ends the elevators are provided with spouts to deliver the products to the respective mills. The spouts at the top and bottom may be varied in arrangement, so as to deliver one or another of the products to each mill, according to the requirements of any particular process.

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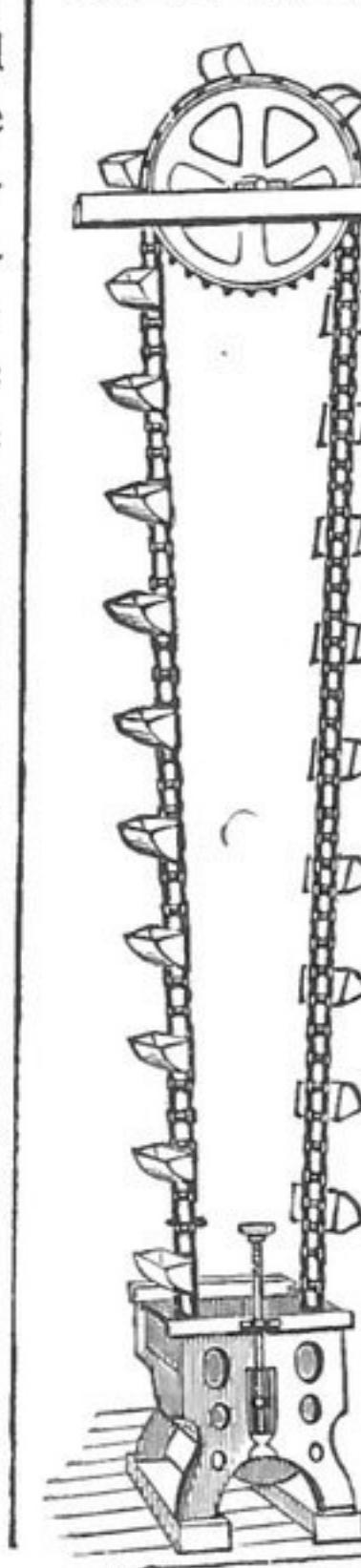
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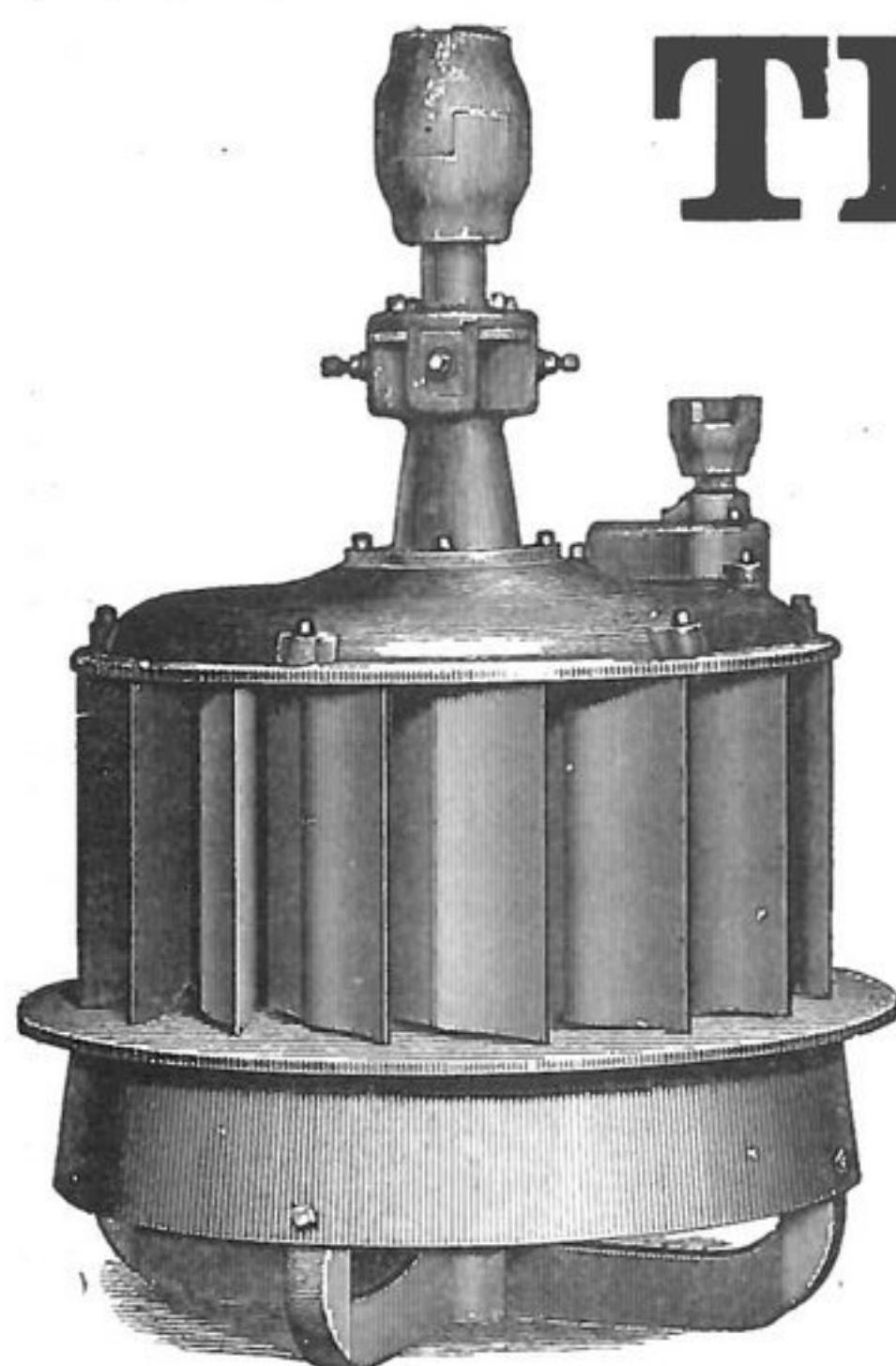
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New Pamphlet sent free by



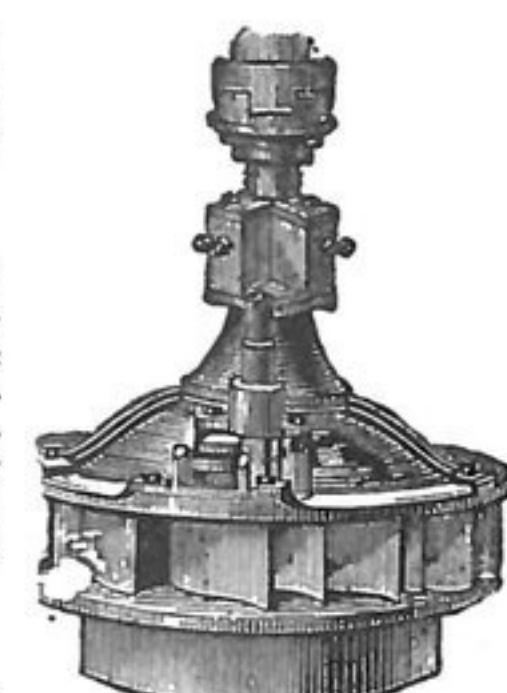
Burnham Bros., York, Pa.

### MERCER'S RELIABLE

#### Turbine Water Wheel.

This wheel is acknowledged one of the best on the market. Has valuable improvements in the construction which is commanding the attention of buyers. Send for catalogue and price list. T. B. MERCER,

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## POOLE & HUNT'S LEFFEL TURBINE WATER WHEELS

Made of Best Materials, and in the Best Style of Workmanship.

### MACHINE-MOLDED MILL GEARING

From 1 to 20 feet diameter, of any desired face or pitch, moulded by our own Special Machinery.

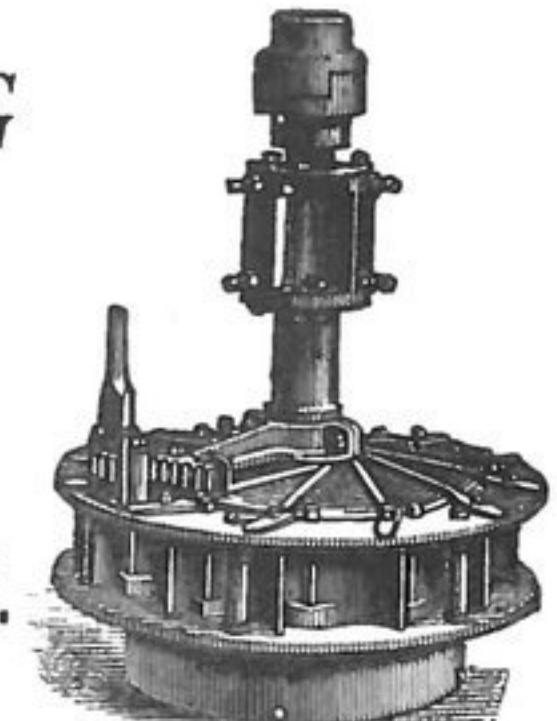
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Of the Latest and Most Improved Designs.

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Special Attention given to Heavy Gearing. Shipping Facilities the Best in All Directions.



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## LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

### The “OLD RELIABLE”

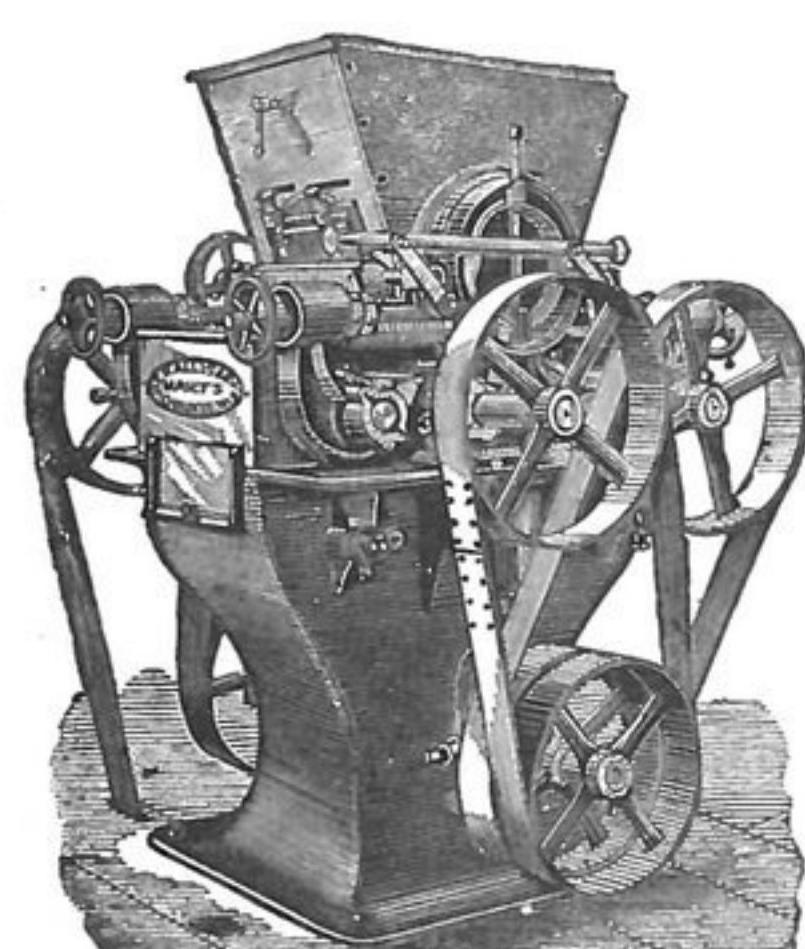
with improvements, making it the

### MOST PERFECT TURBINE NOW IN USE.

Comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this Country. Our new Illustrated Book sent free to those owning water power.

Those improving water power should not fail to write us for New Prices before buying elsewhere. New Shops and New Machinery are provided for making this wheel. Address

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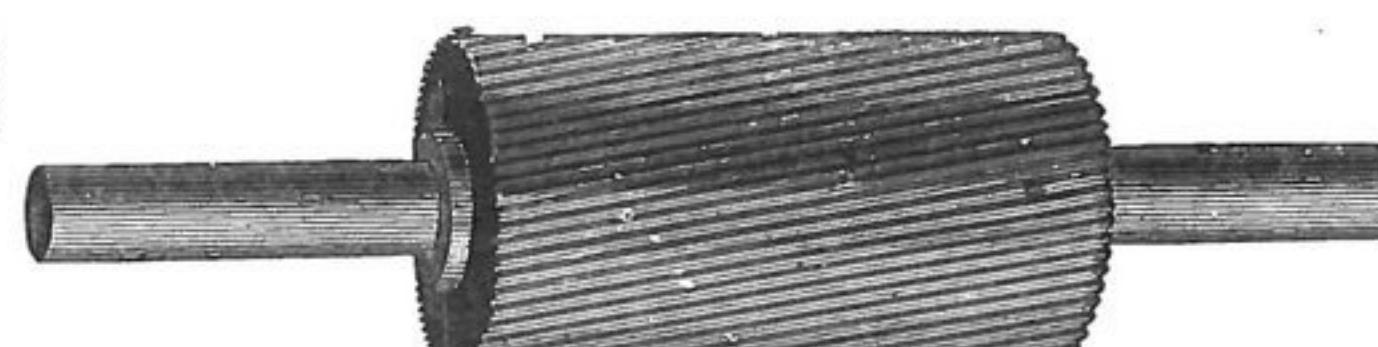


## THE BRADFORD MILL CO.

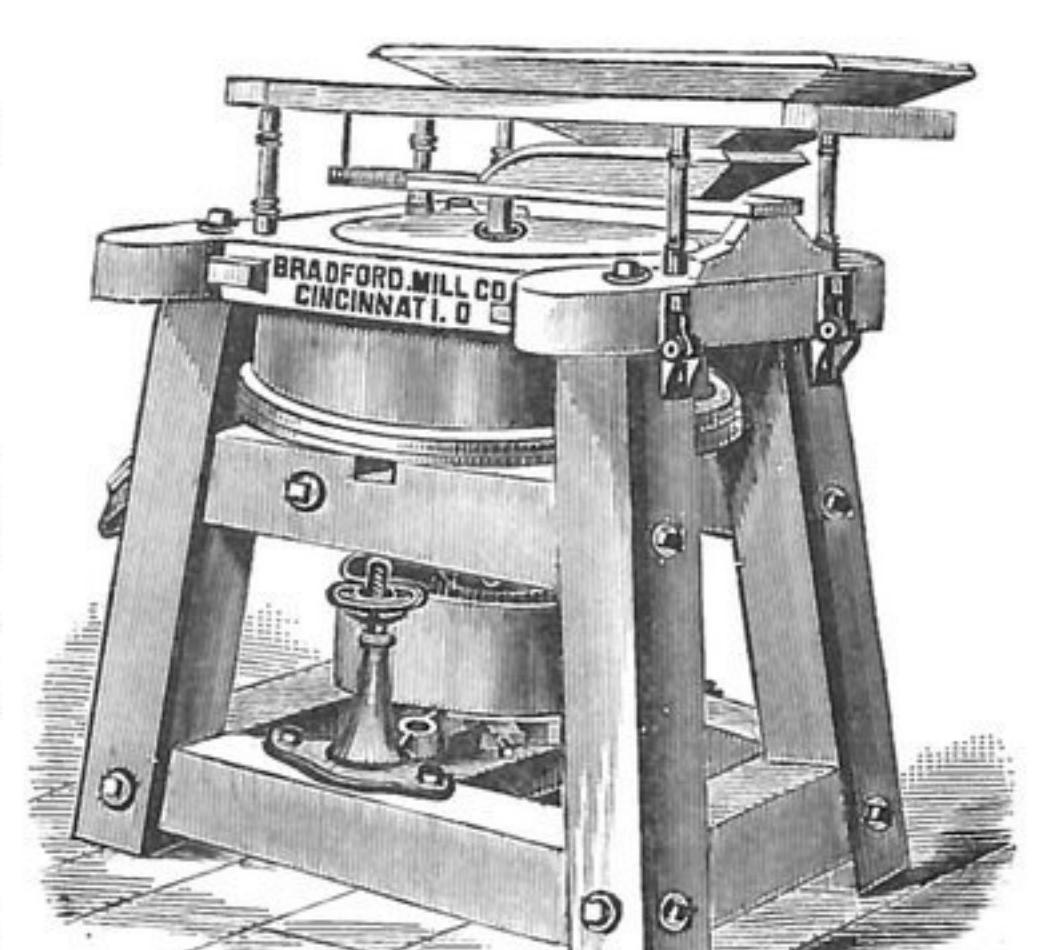
Manufacture a Complete Line of  
**FLOUR MILL MACHINERY,**  
Including Portable Corn and middlings Mills.

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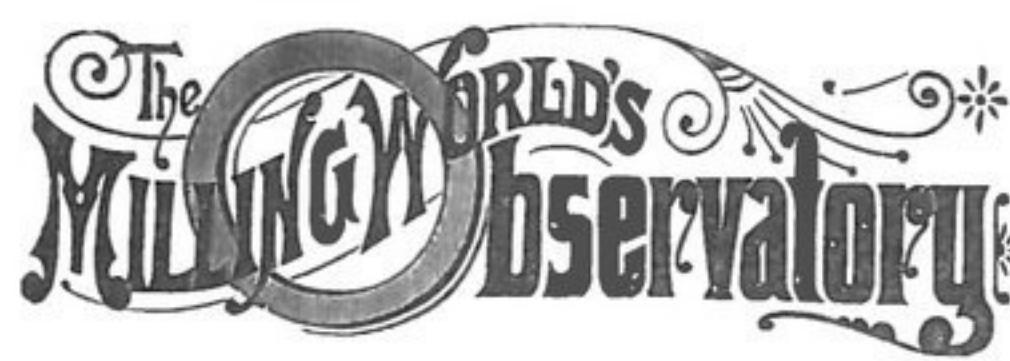
PORCELAIN  
ROLLS  
RE-GROUND.



CHILLED IRON  
ROLLS  
Re-Ground and  
Re-Corrugated.



EIGHTH AND EVANS STREETS, - CINCINNATI, OHIO.



## THE KNOXVILLE CITY MILLS.

The Knoxville, Tenn., *Sunday Courier* of Feb. 1, contains the following: A new and important industry has already been added to our city. We refer to the new City Mills, corner of Crozier street and E. T., Va. & Ga. Railroad. These buildings during the process of their erection and since their completion, have been the admiration of all. The concern operating this new enterprise is known as the Knoxville City Mills Company, and is composed of some of our leading citizens. It shows the enterprise and progressiveness of which our city is composed, and is a want long felt, of which our city, one and all, can well feel proud. The incentive to this new venture was the increasing demand of our citizens for better grades of flour than were being manufactured by the mills in this vicinity, and also from the fact of increasing large shipments of flour from other parts of the state and the North—flour even being shipped from Colorado. The Knoxville City Mills Company reasoned that if other mills could ship from a distance and pay railroad freights, and leave a margin of profit why could not a mill be built in this city and operated with success, being in the center of a wealthy and populous section, where good wheat is grown, and where there was a ready demand for good flour, and all the offal, corn, meal, feed, &c., found ready sale. An undertaking of this kind, however, is no small matter, and to get the best mill, regardless of cost, was something not easy to decide; and a mill second to none must be built, or none at all. After much investigation and many miles travel, the company decided to let the contract for the mill to the Stillwell & Bierce Manufacturing Company, of Dayton, Ohio, to make all plans, and be responsible for the success of the mill, and establish the grades of flour. This responsibility was placed on Mr. R. C. Brown, representing the above firm, to carry through to successful completion. That the mill is a complete success an evidence of the fact is the Knoxville City Mills Company have induced Mr. Brown to take an interest with them and act in the capacity of superintendent of the manufacturing department.

A personal visit is necessary to actually comprehend the magnificent mill and all its powerful and well arranged machinery, all working with regularity in every detail, turning out the finest grades of flour that it is possible to make by any known system of the most modern times. On stepping into the mill from Crozier street, you enter the first, or the technical term, roller floor. There you see in one line, running parallel to Crozier street, seven double sets of Odell roller mills, each machine containing two pairs of rolls, all quietly but busily at work. Some are 18 and some are 24 inches long, and all 9 inches in diameter, made of chilled iron, very hard and mathematically true. Six pairs are corrugated and eight pairs smooth. The corrugated rolls are for the purpose of reducing the wheat to flour and middlings, and the smooth rolls are used in the different stages of reducing the middlings to flour, eliminating the germ &c., which is necessary in a modern gradual reduction mill. As an idea of the extent in which this is carried out, each of the 14 pairs of rolls are working on a different material. To follow through the process of reducing the wheat will give the reader something of an idea of the system.

First, after the wheat has been thoroughly cleaned, it passes to first of the corrugated rolls, with coarse corrugations. This operation is intended to just split the berry in the crease. It then goes to an elevator and is carried to the top of the mill and is discharged into a short reel, covered with wire cloth, which separates the middlings and flour thus made, and sends the broken parts back to the second pair of corrugated rolls, where it is reduced a little finer. It then goes to another elevator, and to another reel covered with wire cloth, where another separation is made, the broken parts going to the third pair of rolls, and so on in succession, until the bran part of the wheat has passed through six pairs of corrugated rolls before the bran is clean.

After this operation the flour and middlings are taken up in another elevator to the silk reels, which are covered with increasing fineness, and the flour and middlings are then separated, the flour being mingled with other flour from different reels, and all going to the packers to be put into sacks. The middlings taking another course, go to what are termed purifiers, covered with silk, and having a current of air passing up through the silk and the middlings. This operation is for the purpose of taking out the fiber and light fluffy material that can not be separated any

other way. From the purifiers the middlings go back to the smooth rolls, in different grades, and are then gradually reduced, and by a succession of reducing, elevating, bolting, purifying and grading, it is finally sent to the flour packers, absolutely pure, which is not the case when millstones, like the old-fashioned way, are employed, and pure flour can only be obtained by a very elaborate system of gradual reduction, such as is employed in the new Knoxville City Mill. There are also on the roller floor the flour and bran packers, scales for weighing and the two runs of millstones, used for making cornmeal, feed, etc. On going up to the second or bin floor, the first you see is the bins for holding the different products of the mill, also two middlings purifiers, two beautiful bolting reels, two bran dusters, and one wheat cleaner. On the third or bolting floor are seen three purifiers, seven bolting reels, six scalping reels and one cockle machine. On the fourth or attic floor you see a grading middlings purifier, six bolting reels, one scalping reel, two wheat cleaners and the heads of twenty-seven stand of elevators. It may also be mentioned that all the dust made in the process of purification is all caught in dust collectors, so that none is blown out of the mill. The wheat is received in the attic of the mill from the elevator building adjoining, and it goes to a separator for the purpose of taking out sticks, straws, and other foreign substances, from there to a cockle machine, where the cockle is extracted, and which we may say is a very novel machine, from there to a smutter, thence to a scourer, and finally to a wheat brush machine, which prepares the wheat for the first roll, each machine performing a part in getting clean wheat. In the basement of the mill all that is seen are the elevator boots and the necessary shafting and pulleys used in driving the rolls and all the machinery in the mill.

On going through to the engine and boiler rooms, there we find a large and powerful engine of the automatic style and a tubular boiler to furnish the power to drive the mill. On the east side of the mill and 15 feet away, is the large elevator building connected by a power shaft with the mill which has a storage capacity of 50,000 bushels. Here all the wheat, corn, &c., is received. The capacity of this mill is at present 150 barrels per day, and is built with a view of increasing to 300 barrels, whenever in the judgment of the company the trade demands it.

## Notes from the Trade.

Caledonia, Minn., wants a steam grist mill.

A starch factory will soon be started at Whatcom, Washington Territory, the machinery being already ordered for the purpose.

"Not so good as our hopes—not so bad as our fears," is the way the Mark Lane Express sums up the farm results of 1884 in England.

At Burlington, O., Feb. 3, Dougherty & Bros. flouring mill and several small buildings were destroyed by fire. The loss is \$20,000; partly covered by insurance.

The large flouring mill of J. C. Harris, at Montgomery, Ind., was blown up at noon, Feb. 7, scalding the engineer, John Mattingly, to death. The loss caused by the explosion is not known, but is large.

A company has been organized at Ithica, N. Y., for electric lighting, using the Brush system. Their motive power will consist of two Ball Engines, 60-horse power each and two steel boilers, furnished by the Ball Engine Co., of Erie, Pa.

S. W. Sears, of Utah Territory, was one day last week making arrangements to place 100,000 bushels of fine wheat on the St. Louis market for milling purposes. The wheat is of a very high grade, and a number of millers have bought car load lots from him.

In a compilation of the returns received by Commissioner Hutchins from the leading farmers in Iowa, the average monthly wages paid the agricultural laborer is given at \$19 23, San County is credited with paying the highest, and Pocahontas the lowest wages of any counties in the State.

The Farmers' Canal, in Merced County, Cal., designed to irrigate 36,000 acres of land, is approaching completion. It starts from the Merced river, four miles above Snelling, and about six miles from the river passes through a tunnel 1,700 feet long. Eleven miles of the canal have been finished.

The machinery for the manufacture of paper barrels, in which citizens of Minneapolis are interested, is said to be perfected and in satisfactory working order, with the exception of the drying apparatus, which will be completed within the ensuing month. It is claimed that paper barrels will soon be substituted for wooden in many of the leading mills of the country.

An estimate has been prepared of the cost of raising wheat at Manitoba, which was accepted by

the Farmers' Union as correct, and is based on a production of twenty-five bushels per acre; cost of plowing and seeding, \$4.20; cutting and harvesting, \$3.20; threshing, \$2.10; hauling to station, \$2.45; total, \$11.95 per acre. The cost per bushel is 47 1-5 cents, or when cleaned for market, which reduces the total, to be sold, 53.11 cents.

A Californian, writing from the Transvaal, South Africa, whither he had gone to superintend some gold mining operations, says: "Lumber is scarce and dear—about 18 cents a square foot. Most of it comes from America and the Baltic. The flour we eat comes from Australia or America, our buggies, (called spiders here), our agricultural implements, our shovels, our picks and the mining managers come mostly from America."

The French forces in China are drawing on California for commissary supplies. The San Francisco Commercial News of January 23 says: Yesterday one hundred tons of oats and a like quantity of barley were shipped on the China steamer on an order from the French government, which, it is said, is endeavoring to contract for four hundred tons of each per steamer for the next eight months, and also for a quantity of flour for the use of the French troops in the East. Exactly how much flour is to go forward by each steamer, and other particulars are kept secret by those interested.

The unusually low stage of water at Minneapolis has been giving the millers much trouble, and for several days but few mills have been able to run. A member of the firm of Washburn, Crosby & Co. said that he had never known the water so low. This company is hastening forward with all possible speed the work on its extensive boiler and engine houses, so as to be equal to emergencies of this kind in the future. Many of the other firms are planning to put in steam power, and it will probably not be long before all the mills are thus provided. The Pillsbury A and Palisade and Pettit mills have already steam engines in place. The steam engine which was put into the Island Power Building last summer has been started up.

"As an illustration of how much benefit the river is to St. Louis," remarked Mr. D. R. Francis, "I sold, some time ago, 50,000 bushels of corn to Baltimore parties, and though cars were immediately sent to the elevators and everything hurried, it took nine days to load them, and from five to fifteen days to get them to their destination. Yesterday morning I wanted to ship some corn to New Orleans, and asked to have a barge sent to the elevators. It was done, and I picked up the grain on the floor, and at 6 o'clock, I had 50,400 bushels loaded in the barge, thus accomplishing in nine hours what had taken nine days to do before. This grain will arrive in New Orleans in about seven days, and will be transferred to a steamer as quickly as it was loaded on the barge.

"The most serious difficulty in the way of transforming the Erie into a ship canal," the Buffalo Courier thinks, "is one of engineering. For such a canal the water supply must come wholly from Lake Erie, as the resources between Buffalo and the Hudson river would be inadequate. Lake Erie is 568 feet above tide-water, and there is no point between Buffalo and the Hudson where higher land intervenes. This would make a clear course for navigation except for the Montezuma depression. At this point there occurs in the present canal a descent by lockage of 36 feet, though the Montezuma marshes are 390 feet above tide-water. After this depression is passed there is a gradual ascent again till the Utica level is reached, 426 feet above tide-water. To pass the entire length of the canal would therefore either require a depression of the Utica level 36 feet, an impossible engineering feat, or the building of a viaduct across the entire Montezuma marshes. This viaduct would have to stretch 58 miles, over 16 miles of which the viaduct would have to be 36 feet high; 33 miles in addition it would have to be from 20 to 25 feet high, and for a short distance it would be a less formidable structure."

The deputation from the Toronto Board of Trade, who recently waited on the Hon. John Costigan, Minister of Inland Revenue, with reference to the grading of wheat, say that the impression they obtained from the language of the Minister, was: First, that a separate grade will be made for Manitoba, and, second, that the inspection of grain throughout the entire Dominion will be made uniform, and that to this end a chief inspector for the Dominion will be appointed. It was also intimated that the headquarters of this official will be in Toronto. The Manitoba farmers and grain dealers strongly object to the changes proposed in the grading of wheat, and have sent the following protest to the Minister of Agriculture: "The farmers and grain dealers of Manitoba are strongly opposed to any interference on the part of the Toronto and Montreal Boards of Trade whereby wheat of this Province should be deprived of its name. The name of 'Mani-

'toba hard' cannot be dispensed with, and the people of this Province will determinedly oppose any attempt on the part of Ontario to derive advantage in the grading of their wheat at the expense of Manitoba. Manitoba hard wheat has a distinctive reputation which must be maintained."

Mr. W. W. Ogilvie, of the Ogilvie milling firm, returned recently to his home in Winnipeg after visiting all the elevators owned by the company in Manitoba. He said: "We have bought this season nearly two million bushels of wheat in Manitoba, and I think that fully one-third still remains in the hands of the farmers. I find the farmers well satisfied. Many of them have told me that they are clearing \$1,000 to \$1,500 from this crop, and they all say that they are much better off than the farmers in Dakota and Minnesota, and are getting 10 to 15 cents per bushel more for their wheat. They now understand that this is caused by the duty of 15 cents per bushel on American wheat imported into Canada, and we buy largely in Duluth for export to Europe. What we have there now costs us fully 12 cents per bushel less than what we have at Port Arthur. Bonding arrangements have just been completed, allowing us to ship American wheat to Europe via Port Arthur. In this way we expect to ship a large quantity of Minnesota and Dakota wheat, as we can make better arrangements from Port Arthur to Montreal than from Duluth. We have now under consideration the extending of our elevator system as far west as Regina, and have the lumber now at Rat Portage for the elevators required on the extension of the Southwestern. The country through which this railway will run is so thickly settled that we intend erecting elevators every ten miles."

The excellence of American flour is unquestioned, says the *Farmers' Tribune*, and the product is as popular as it is superior in quality. It is exported largely, and people must and will have it in spite of any duties which may be imposed to increase its price, and force the people to use their home product, of whatever quality it may be. In spite of the duty of 50 cents per barrel imposed on American flour by the Canadian government, Canada imported 531,000 barrels from the United States in 1884, which was a gain of 100 per cent. over the imports of the previous year. The duty paid by the importers increased from \$132,000 in 1883 to \$265,000 in 1884. This increase of the exports of flour from the United States in that one direction thus becomes remarkably significant, when we consider that the export has doubled under protective duties. It would have been gratifying enough had it doubled with no protection on the part of Canada. The duty is, of course, imposed for the protection of the Ontario millers, and it has had so little efficacy during the past year that the Government of Canada is now requested to raise the duty on American flour to \$1 per barrel. Even if this be accomplished, the door will by no means be closed, and American flour will probably hold its own in Canada, and possibly gain in the popular esteem to which it is entitled by its superiority over the article manufactured at Ontario, and, in fact, in all other countries.

The Board of Trade of Kansas City, Mo., has issued the following circular: "Your attention is earnestly called to the many advantages the Kansas City market presents for the handling and filling of orders for all mill products. Situated at the very gateway of the finest milling section of this country, it commands the immense product of its mills, and offers in this respect whatever advantages there are in being the initial ground between the manufacturer and the consumer. During the past two years, milling throughout western Missouri and in Kansas, has, through the addition of all the new and improved modes of manufacturing, reached a point in excellence, that in the quality of the output, is not excelled in any other market. There are no finer built mills, complete with the latest improvements, with better facilities for securing the best grades of wheat, nor more skilfully or understandingly managed, than those to be found west of the Missouri river, and which are all tributary to this market. The railroad facilities of this market are unequalled in the West, permitting flours to be handled at the minimum cost of labor, drayage and storage, while the many lines reaching out into the North and East and South, give an outlet for our products that can only be limited by the demand. Freight rates to all points, and especially the South, owing to the liberal policy of the management of these roads are extremely favorable. To those seeking purchases of mill products, or for a place in which to locate for business purposes, no better field can be found than that of Kansas City, and by such the closest investigation is requested. All communications relative to the above will be cheerfully and promptly answered if addressed to the Secretary of the Board of Trade."

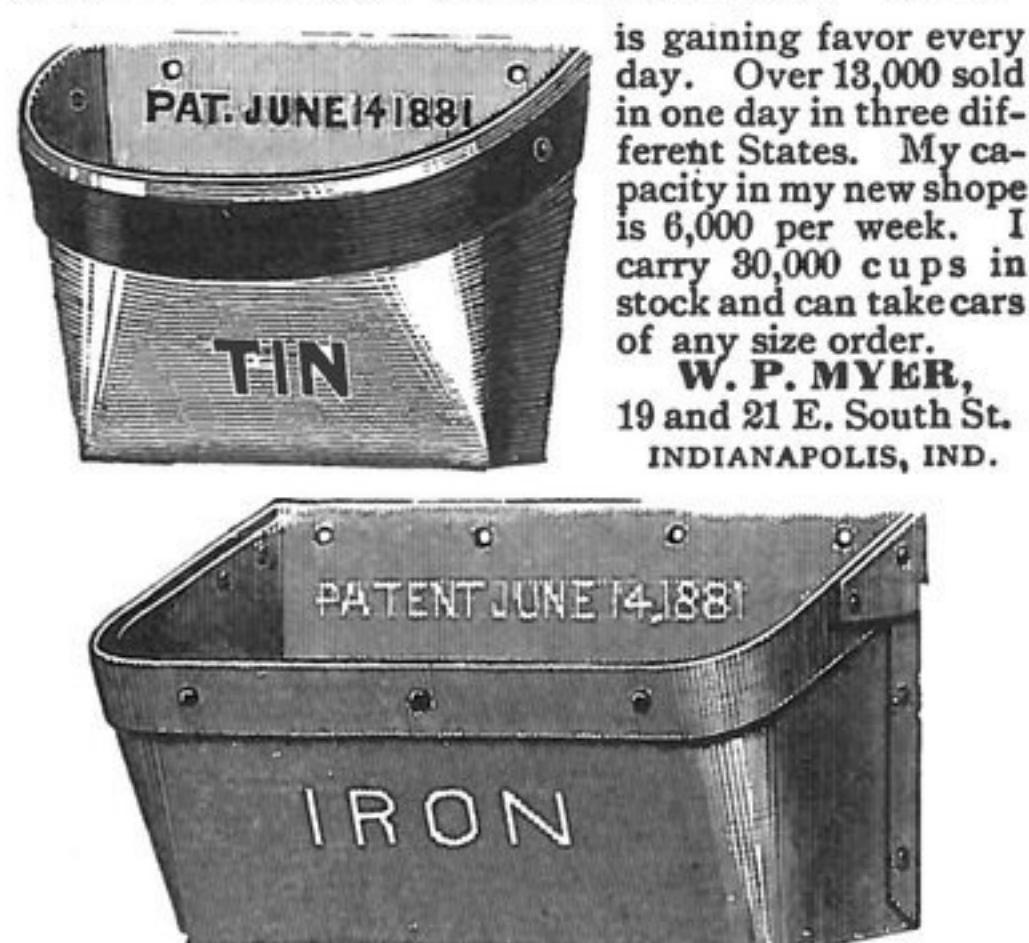
## CONCLUSIVE PROOF OF THE SUPERIORITY OF THE GRAY NOISELESS ROLLER MILL.

*Is furnished by the fact that these celebrated machines will be used by Messrs. C. A. Pillsbury & Co. in their new **PILLSBURY "B" MILL**. All bidders for the work of constructing this immense mill being required to figure on using the **Gray Roller Mills**. The selection of these machines for the new "B" mill was the result of several years practical test in the other mills owned by the same firm in competition with various other roller mills, the decision being unanimous that, in all particulars, for practical work in the mill, **Gray's Noiseless Roller Mills** were superior to all others. We wish to assure our customers who may not wish to build 2,000 barrel mills, but who wish to build mills of smaller capacity, that no matter what size mill they desire to build or how small its capacity, the **Gray Roller Mills** are the best they can use, and we shall at all times furnish machines equal in every respect of material and workmanship to those which will be used in the new **PILLSBURY MILL**.*

## EDW. P. ALLIS & CO., RELIANCE WORKS, MILWAUKEE, WIS.

*Sole manufacturers of **Gray's Patent Noiseless Roller Mills**, adapted to mills of any desired capacity.*

### THE BOSS ELEVATOR CUP



Toledo Mill Picks and Stone Tool Mfg. Co

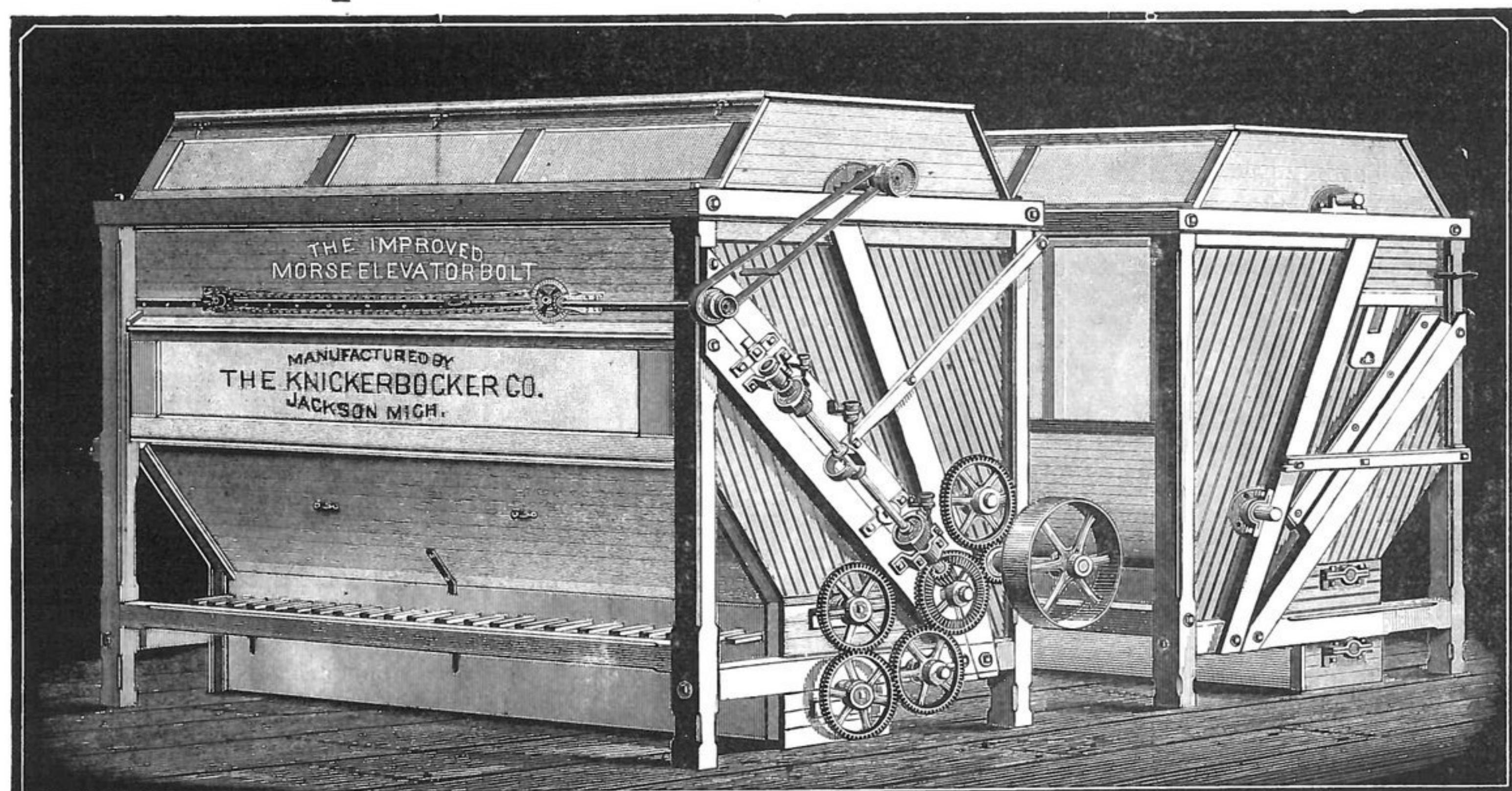
Manufacturer and Dresser of  
**MILL PICKS.**

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address **GEO. W. HEARTLEY**, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

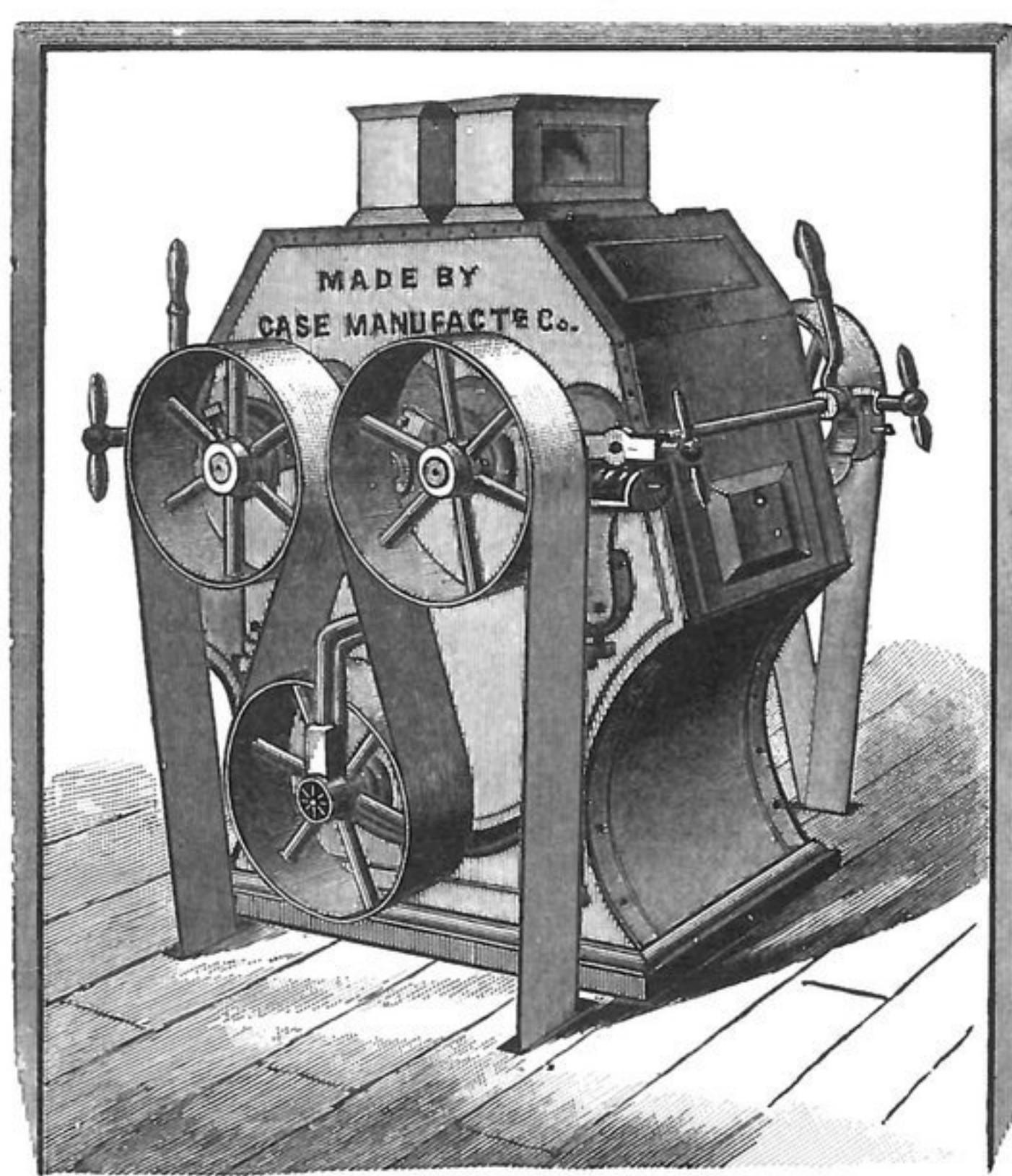
ALSO MANUFACTURERS OF  
SHAFTING, PULLEYS, HANGERS, COUPLING  
AND MACHINE JOBBING.

### The Improved Morse Elevator Bolt.



DEMONSTRATED IN OVER 100 MILLS TO BE THE BEST BOLTING DEVICE KNOWN.

## THE KNICKERBOCKER CO., JACKSON, MICH.



9x18 4-ROLL MILL. "BISMARCK."

C. A. S. E.

CASE MFG. CO., COLUMBUS, OHIO.

XENIA, OHIO, Dec. 15, 1884.

*Gentlemen: Feed box received; put it on in a few minutes; started up in a very short time. I was surprised to find my tail over as poor. I examined middlings and found them at least 25 per cent. clearer. Examined flour, was whiter and clear of specks. You know I feel happy, and all because of that little feed box. To sum it up:*

- 1st. Simplicity and Durability.
- 2d. Takes care of itself.
- 3d. Feeds alike all the time.
- 4th. Will increase capacity of any Purifier one-fourth.
- 5th. Will make clearer middlings by Twenty-Five per cent.
- 6th. No miller can afford to do without one on any machine in mill.
- 7th. Perfection is the name.

*Wishing you a Happy and Merry Christmas, I am, Respectfully yours,*

W. H. HARBISON.

*We invite all who Contemplate Making any Changes in their Mill to Write to us or Come and See us Before Placing Their Orders.*

## THE CASE MFG. CO., COLUMBUS, OHIO.



### THE MILLING INDUSTRY OF BUDAPEST.

FROM a review on the economical condition of Hungary during 1884, we gather the following items in relation to the milling industry: The condition of the milling establishments was not very agreeable; excessive competition worked to our disadvantage. In England we have to fight America; in Germany the high protective tariff, which will soon close to us the markets of France also. Besides this, milling has advanced so much all over the world and has accepted and adopted all those technical improvements which primarily established the fame of our mills. Nevertheless our establishments are progressive, we are not satisfied with our past attainments, but strive to discover new improvements for the cheaper production of our high grade products; and in these attempts we have, partially at least, been successful. Trade was poor, and activity was shown only during the last three months of the year, but in spite of all these drawbacks and the reduction of prices, all our mills are able to pay dividends to their stockholders, although smaller than those of last year. A comparison of the stock quotations gives an interesting view of the value of the different mills during the past two years:

Name of Mill.	Stocks stood on Dec., 1884.	Stocks stood on Dec., 1883.
Concordia.....	580	582
Elizabeth.....	245	246
Louise.....	312	292
Miller & Baker.....	468	390
Roller .....	585	595
Victoria.....	385	450
Ofen Pest.....	1,330	1,245
Pannonia .....	1,025	1,249

### TRADE WITH THE ARGENTINE REPUBLIC.

In regard to the commerce between the United States and the Argentine Republic, the latest official returns afford but little encouragement. "In fact," says the last report of Consul Baker at Buenos Ayres, "It makes no headway whatever against the overwhelming current which for all these years has been so set and confirmed in the direction of Europe. The figures for 1883, compared with the previous year, are as follows:

Trade—	1882.	1883.
Imports from United States....	\$5,094,764	\$4,938,054
Exports to United States....	2,956,583	3,510,574
Total.....	\$8,051,347	\$8,448,628

From which it appears that there was a decrease of \$161,710 in the official value of the imports, and an increase of \$553,991 in that of the exports, the total trade being \$392,281 more than in 1882.

In regard to imports, the best way to show what we are doing and what we are not doing is by comparison. We therefore give below the principal articles which made up our import trade with the Argentine Republic in 1883, compared with their values for the previous year:

Articles—	1882.	1883.
Turpentine.....	\$29,012	\$65,350
Alcohol and other liquors .....	68,348	55,800
Starch .....	88,303	53,959
Drugs.....	33,280	64,178
Agricultural implements, &c....	528,046	157,248
Lamps and gas fixtures .....	46,200	47,966
Lumber of all kinds.....	2,019,216	1,741,238
Machinery .....	158,444	296,819
Furniture.....	176,847	77,258
Tobacco.....	120,839	144,574
Cotton goods.....	125,000	147,578
Hardware.....	141,623	171,501
Lard.....	26,619	23,597
Kerosene.....	368,189	564,148
Railway machinery.....	278,876	274,888
Hemp and other fabrics.....	129,958	128,588
Total.....	\$4,317,759	\$4,013,685

"This shows a falling off in the articles mentioned of about \$300,000. In regard to

agricultural implements, the decrease was not occasioned by any dissatisfaction with our American manufacturers, but the crops of 1882 were not a good yield, and quantities of machinery which were ordered previous to the harvest were held over for want of any demand. The same may be said in regard to our lumber trade. The demand for American pine was quite weak during 1883, decreased receipts; but since then whole fleets of vessels have been chartered for lumber cargoes to the River Plate; and next year's figures will show a large increase in the shipments. Our furniture of the cheaper varieties has always found a ready sale in the Argentine Republic; and I cannot account for the diminution of the imports, unless it be what I have heretofore suggested, that several manufactoryes of furniture of similar styles and make have been started in this city; and it may be that they are now dividing the trade with us.

"There has been a great increase in the shipments of kerosene, a number of new firms having, during last year, entered the market with new brands; but the demand all through the interior is so steady that the trade will probably have still larger development. In other lines of goods, we continued to have scarcely any share whatever. I suppose the reason for this must lie in the fact that, with the facilities of trade which Europe offers to this country, the close intercommunication by steam which exists and the liberal credits which English, French and German manufacturers can afford to give to Argentine dealers, it is impossible for us to compete with them for such supplies, in spite of the fact that our goods may be really better and at the same prices preferred by the people of the River Plate. In this state of affairs we shall have to abide our time and wait until, in the fullness of our commercial development, we can afford to sustain a closer communication with Buenos Ayres, by means of regular lines of steamships. Until this shall be consummated, it is useless longer to discuss the methods by which our foreign commerce can be increased."

### NOTES.

Writing on the 3d of last Dec. of the business doing in the important market, the *Melbourne Argus* states that in the preceding fortnight it had been quiet, though latterly there had been signs of improvement, which promised more activity as the month progressed. Confidence was unimpaired, and only a few small insolvencies had occurred, but they had no effect on business. As far as the colony was concerned the rains had been plentiful latterly, and it was anticipated that the crops would receive great benefit, and that the yield would be larger than was at first expected. Operations reported had been on a moderate scale.

The German exports of flour have rather fallen off compared with the previous year; in November the quantity was 110,164 qntls, against 133,331 qntls in November, 1883, whilst in the eleven months ended November 30, the total exports were 1,182,897 qntls, against 1,233,192 qntls in 1883. England and Sweden appear to be the best customers for German flour, 30,612 qntls being sent to England in November last, and 24,368 qntls to Sweden. According to the new customs tariff which has been proposed in the Federal Council, the new duty on wheat is to be about 6s. 6d. per 480lbs. and that on maize just over 1s. per 480lbs. Flour also will doubtless be heavily taxed, but the proposed figure is not given; this will interfere with the trade in Hungarian flour with Germany, of which a large quantity continues to be imported.

On January 10th, during a severe gale, a fire broke out in the flour mill of Messrs. Carthew & Son, at Crediton, Devonshire, by which the mill and house adjoining were entirely destroyed, doing damage to the extent of over £10,000. The mill is a very old established one, and has been in Mr. Carthew's possession for nearly half-a-century. At five A. M. the alarm was given, but the local fire brigade were powerless to check the flames, and in about two hours the whole was destroyed, including a fair stock of corn. The mill was a stone mill, to which a number of improvements had of late years been added. The cause of the fire is unknown, and is quite a mystery. Much sympathy is expressed for Mr. Carthew in the neighborhood, where he is highly respected. On

the 5th inst., the mill of Messrs. Gaunt & Bellwood, at Mabgate, Leeds, was also partly destroyed by fire, the cause being reported to be over-heating of bearings. The fire broke out at two A. M., and the loss was about £3,000.

The financial troubles reported from Buenos Ayres will probably not surprise those who have observed the over-stimulated condition of business enterprises in the Argentine Republic. The Government has loaned its credit to public works and to the encouragement of foreign immigration to an extent which it was foreseen must sooner or later subject its finances to a severe strain, and the strain apparently is impending. The natural resources of the country turned expected Budget deficits to surpluses some years ago, and these resources have since been abnormally developed. In 1883, some ten railways were under construction, affording employment to 14,000 men, while the lines working had a mileage of over 3,000 miles. The value of land in some districts advanced from \$480 a league to \$10,000. Immigration, too, was largely fostered; the number in 1881, 32,817, increasing to 63,200 in 1883, and 80,000 (estimated) in 1884. All this, of course, immensely stimulated the development of the country; but it is now seen that the government, so far as its commitments are concerned, has been going a trifle too fast.

### THE PRICE OF WHEAT.

On this subject a correspondent of Bradstreet's says: As the price of wheat has risen, say about 15 per cent. since December, and has in all probability fairly passed the period of such extreme low prices for some years, its present position and a consideration of the visible supply becomes of special interest. For the last three years the stocks on September 1 and January 1 east of the Rocky mountains were:

	Bushels wheat.
September 1, 1882, visible supply.....	12,045,000
January 1, 1883, visible supply.....	21,408,000
Increase of visible supply in 4 mos. ending Jan. 1.....	9,363,000
September 1, 1883, visible supply.....	20,714,000
January 1, 1884, visible supply.....	35,507,000
Increase of visible supply in 4 mos. ending Jan. 1.....	14,793,000
September 1, 1884, visible supply.....	18,156,000
January 1, 1885, visible supply.....	43,366,000
Increase in visible supply in 4 mos. ending Jan. 1.....	24,210,000

From the above figures it will be seen that the increase of stocks east of the Rocky mountains for four months ending January 1 is 158 per cent. greater than the season of 1882-83 and 69 per cent greater than last season. In addition to these facts, when we consider that the stock of wheat in the state of California on the 1st inst. is 816,000 tons, against only 350,000 tons at this time last year, equivalent to an increase of stock of 180 per cent. or 17,397,333 bushels, it will be well for speculators in wheat to recollect that although wheat is yet very low in price, and that prices, from a smaller area of land likely to be reaped this year, are likely to be higher next fall, yet with such large stocks in this country it would be prudent for wheat operators to consider "that he who hastens to be rich shall not be innocent."

The position of our visible supply, exports from the Atlantic seaboard, receipts at the eight western points, and consumption east of the lakes, have been:

1884-85.	Bushels.	Bushels.
September 1, 1884, visible supply wheat.....	18,155,946	
Jan. 10, 1885, receipts of wheat at eight western points from Sept. 1, to date.....	58,854,525	
Jan. 10, 1885, exports of wheat from Atlantic seaboard from Sept. 1 to date.....	25,823,446	
Jan. 10, 1885, visible supply.....	42,629,968	77,010,471
*Balance consumed east of lake ports.....	9,057,037	
1883-84		
Sept. 1, 1883, visible supply of wheat.....	21,604,798	
Jan. 10, 1884, received at eight western points since Sept. 1, 1883.....	41,222,513	
Jan. 10, 1884, exports from Atlantic seaboard Sept. 1, to date.....	17,867,832	
January 10, 1884, visible supply.....	35,005,675	52,873,007
Balance consumed east of lake ports.....	9,054,304	

1882-83	
Sept. 1, 1882, visible supply wheat.....	12,045,595
Jan. 10, 1883, received at eight western points since Sept. 1.....	39,728,524
	51,774,119
Jan. 10, 1883, exports from Atlantic seaboard Sept. 1, to date.....	38,834,163
Jan. 10, 1883, visible supply.....	21,388,769
	59,722,932
	7,948,813

\* This part of the country consumed from September 1 to January 10, 9,057,037 bushels of wheat in excess of their own growth.  
Deficiency of 7,948,813 bushels of wheat supplied by states east of lakes, being excess of their wheat crop over their home consumption.

From the above it will be seen that the states east of the lakes, in addition to consuming their own growth of wheat, have between September 1 and January 10, this season, taken from the general supply 9,057,037 bushels, and for the same period of 1883-84 taken 9,954,304 bushels of wheat; while on the other hand, from the crop of 1882, from September 1, 1882, to January 10, 1883, the same states furnished the general supply with 7,948,813 bushels of wheat. It will be well to bear this in mind, as it may have an important effect in reducing stocks east of the Rocky mountains between the present time and harvest. I would add that from the crop of 1881 the states east of the lakes, from September 1 to January 10, after feeding themselves, added to the general supply 4,636,632 bushels of wheat, and from the crop of 1880, which was a very large crop—the third fine crop in succession—the states east of the lakes, after consuming their own product, added to the general supply of wheat fully 1,000,000 bushels per week. From these facts it will be seen that during the last five crops the states south and east of the eight lake and river ports have during the first three crops—1880, 1881 and 1882—from September 1 to January 10, grown enough of wheat for their own use, and had a surplus to add to the general supply, while during the last two crops—1883 and 1884—these states have not grown enough for their own demand, and have taken a considerable quantity of the wheat from the general supply.

I consider the price of wheat for No. 2 quoted to-day in New York at 91½c for February and 96¾c for May and in Chicago 79½c for February and 85¾c for May as very moderate prices, and would caution parties who are inclined to sell for future delivery what they have not got, that in the event of a cold spring and cool, rainy summer in Europe, such as that of 1879, they might lose a great deal of money, as wheat would advance materially in price. They must recollect that even if they should have a warm, dry summer in Europe, wheat from the short area under cultivation must be dearer than at present.

### FOREIGN RICE TRADE OF 1884.

The trade in the East India rice was during the whole of the past year unsatisfactory from first to last. Sharing with the depression in other lines, as well as owing to inherent causes, prices steadily shrank until Rangoon reached the lowest range of values ever known. No class can be noted as having escaped the effect of the decline; it fell alike on importers, speculators and millers, and many in each of these departments of trade were seriously crippled and not a few entirely ruined. With every decline, those who were already heavily stocked purchased again and again, and when prices sank to the lowest point ever known the more wary were also tempted into making investments, and, with subsequent decline, shared in the common fate. To add to the general discomfiture, every crop which had hitherto been of low and inferior sorts turned out of far higher grade than usual; hence the supply of good rice

proved to be in excess of any previous year. In December the decline was finally checked, and prices became and are now steady. It is now generally believed that the bottom has been reached, as the extraordinarily low range of values have drawn to this cereal a large demand for manufacturing purposes which have hitherto been supplied from other grains. Messrs. Dan Talmage's Sons furnish the following statistics: Exports from the East Indies in 1884, 6,110,400 bags; 1883, 7,288,000 bags; stocks in English ports at date, 891,560 bags last year, 1,089,804 bags; quantity afloat, 151,720 bags; last year, 121,256 bags.

#### MAKING A MINCE PIE.

"My dear," said Mr. Spoopendyke, folding his napkin and pushing his chair back from the table, "My dear, you are a pretty good house-keeper, and once in a while you contrive to cook up a fair meal, but you have no business fooling around a mince pie. There never was but one woman who could make mince pie, and that was my mother."

"I thought that was nice," returned Mrs. Spoopendyke, with just a little quiver resting on her lip. "I got it out of the cook book—"

"And you'd better put it right back in the book as a warning to other amateurs," continued Mr. Spoopendyke. "I don't say that this is especially bad, only it doesn't meet with all the requirements of pie as they were instilled into my young mind. You might work it on Foundling Hospitals that never had any mother, but it hasn't the soul I used to get out of pie when I lived at home."

"How did your mother make the mince pies, dear?" asked Mrs. Spoopendyke. "If I knew what she used, perhaps I could get up one of which you would eat six slices instead of four." And with this purely feminine dig, Mrs. Spoopendyke looked modestly downward and began folding knife platings in the table cloth.

"Come!" exclaimed Mr. Spoopendyke, jumping impetuously from his chair. "This is Sunday afternoon, and if you've got the ingredients, I'll show you how to make a pie that will draw howls of envy from the neighbors," and Mr. Spoopendyke led the way to the kitchen. "Where's your chopping tray and the apples? Fetch me the hand guillotine and the beef! Look alive now, my dear, and we'll startle the world with some revelations on the abstruse subject of mince pies!"

"Let me put this big towel around your neck, so you won't grease your clothes," suggested Mrs. Spoopendyke, dragging out a huge crash towel.

"What's that for?" demanded her husband, contemplating it with no amount of favor. Which end of the pie is that thing supposed to have influence with? If I make up my mind when I get through that this pie wants to be shaved, I'll put on this shirt, but in the mean time I want room for all

my limbs. "Now," he continued, as he dumped the beef and apples into the tray and went at them vigorously with the chopping knife; "now, you watch the proceedings and note how this pie begins to assume proportions."

"Didn't your mother peel the apples before she chopped them?" asked Mrs. Spoopendyke, quietly.

"Eh!" ejaculated Mr. Spoopendyke, slowing up a little and looking into the tray distrustfully. "Of course not," and he resumed his labors with still more energy. "If you did, there's were you made your mistake. I suppose you peeled the beef too, didn't ye? Though I don't know," and he stopped short and regarded his work attentively. "It strikes me this meat would chop finer if some one had dropped a spike driver on it once or twice. Anyway, you don't want your meat too fine, and I guess this will do," and Mr. Spoopendyke set the tray full of lumps on the table and rolled up his sleeves.

"What will you have now, dear?" inquired his wife, tenderly.

"Some flour and water," replied Mr. Spoopendyke, cheerily. "It's the crust of a pie that is its genius, and I'm going to turn out a slab of pastry that will be a monument to the artist who is weaving this job. Gimme the flour and water, while I feel as one upon whom the spirit of a successful pie rests visibly?"

Mrs. Spoopendyke brought out the material and once more resumed the relation of pupil to the exercises.

"Anything else, dear?" she asked, as Mr. Spoopendyke wet down his flour and jammed his fists in the paste.

"Nothing but profound silence," retorted her husband. "The chief trouble with the crust to your pie is that you allow your attention to be distracted from it at the critical moment. I, on the contrary, will stop boxing this overcoat for that mince meat just at the second it reaches flakiness," and he slammed in more flour and plunged again into his ambitious effort in the way of crust. "There!" said he, when he had fought it to the consistency of sand and mucilage, and rolled it out into two thick chunks. "There is the triumph of pie over putting! Lead out the pan whom the gods would honor, and let's see how this combination of hereditary intelligence and acquired brains will go when it's cooked!"

Mrs. Spoopendyke handed him a pie-pan into which he dropped his bottom crust, and then poured the mince meat.

"Got to lift your teeth pretty high to get around some of that meat," he observed, as he tried to poke the lumps into position with a stick. "I'm not sure whether mother used to grate the meat or crack it with a hammer, but it don't make so much difference. It's the crust that talks, when you come to conversation on pie. Now, you do this," and he marked out a sprig on the top crust with his thumb; "and when you get it on, thus, you pinch it around the edges, so! See? My mother used to have an old wheel out

of a wooden clock, and she printed landscapes in holes all over the pie. But that isn't necessary. It adds lustre, but no dignity to the performance. Now, we put it in the oven, this wise, and in a short time we will have accomplished results in the immediate line of pie."

"It is really wonderful how well you remember how your mother made them," smiled Mrs. Spoopendyke.

"You won't feel badly because it beats yours?" said Mr. Spoopendyke, kindly. "You won't cry?" and he chuckled her under the chin, and opened the stove-door cautiously to see how affairs were progressing.

"I'll try not to," replied Mrs. Spoopendyke, casting her eyes down, and suppressing something that sounded like a sob.

"Let's see. You stick in a broom splint, don't you, when you want to know if the pie is done? Where's your broom? Show me the happy broom that is to be immortalized by testing this grand apotheosis of pie!"

Mrs. Spoopendyke produced the broom, and her husband, carefully selecting one of the splints, jabbed away at the upper crust.

"It won't go in," he remarked, rather dolefully, selecting another with similar results. "The trouble is with the broom. Haven't you got a broom that knows something about its business, or is this one of those pious brooms that won't work Sundays?" and he broke up several more splints in a vain endeavor to penetrate the pie.

"Hadn't you better try the handle, dear?" suggested Mrs. Spoopendyke.

"No, I hadn't better try the handle, dear!" mimicked Mr. Spoopendyke. "Come out here, and let's see what's the occasion of this uncalled for resistance!" and Mr. Spoopendyke hauled his pie out of the oven and fired it down on the table. "Got an idea you're going to be assassinated with a broom splint, haven't ye? Think you're a sort of a bulwark of American liberties and bound to resent foreign intervention, don't ye? Well, you ain't; you're only a measly pie, and you're going to have something stuck in ye, if it takes a cold chisel and a cannon!" and Mr. Spoopendyke stabbed at it with a fork; and then with a chopping knife, without producing the faintest impression. "You're up in pie, what d'ye s'pose is the matter with the thing?" he asked, turning on his wife.

"If I'd been your mother, I should have put some lard in the crust," returned Mrs. Spoopendyke, complacently.

"I don't know how you're going to get lard into a crust that you can't penetrate with a bayonet!" retorted Mr. Spoopendyke, upon whom it began to dawn that there was a hitch somewhere. "I've almost forgotten how mother did try pies to see if they were done."

"Did she ever try a club?" inquired Mrs. Spoopendyke, timidly.

"No, she didn't try a club!" roared Mr. Spoopendyke. "Come hither, my gentle pie!" he howled, planting his fist in the

middle of the apparatus. "Listen to the voice of the siren inquiring within!" and he dropped it on the floor, and planted his heel on it. "Front door closed for repairs: entrance at the back!" and he kicked the whole business to the ceiling.

"Your mother must have been very vigorous for her age," observed Mrs. Spoopendyke, calmly.

"It's those dod gasted lumps of meat," snarled Mr. Spoopendyke, picking up his pie, and examining its knobs and bumps attentively. "I thought they'd melt when subjected to intense heat. Anyway, the inside of that pie is all right, If I could only get the lid off. Got anything I can get under the edge and lift the roof off this business? Gimme that can opener! Give way, now! Whoop! Once more! Ki yah! All together, now! Whe-e-e! There she comes!" And the crust gave way revealing chunks of beef and apple parings, half-cooked, and still steaming.

"I suppose your mother put in the spices and cider after the hired man had wrenched the pie open," remarked Mrs. Spoopendyke, solemnly.

"You do, do ye?" squealed Mr. Spoopendyke, squatting down and resting his hands on his knees, while he grinned in his wife's face. "That lump of quicksilver you call your mind, has got around to where it transacts the supposing business, has it? P'raps you don't like the pie! I s'pose you've got some fashionable notion that you don't care to associate with this pie? Well, you needn't. I don't force unpleasant acquaintances on my wife! I believe in making home a dod gasted paradise, I do? Go forth, pie!" and he shied it through the window, glass, sash, and all. "That suit you!" he yelled. "Does your measly moral nature feel relieved by the absence of the pie you have been instrumental in casting upon the chilled charities of an unsympathetic world?"

"I guess that pie can take of itself, suggested Mrs. Spoopendyke, soothingly. "The next time I make one, I'll try and have it just as your mother used to."

"You'll fetch it!" roared Mr. Spoopendyke, stamping up and down the kitchen and slapping the flour off his coat. "You never have any trouble with things, after I have shown you how! Some day I'll pour lard in your ear, and spice in your eye, and leave you in the oven to reflect on how you'd like to be cut off from intellectual social intercourse, just because you ain't half baked!" and Mr. Spoopendyke slammed the door after him, and mounted the staircase with heavy tread.

"I don't care," murmured Mrs. Spoopendyke, as she swept up the debris, "I don't care. If that is the way his mother made pie, I don't wonder it left a strong impression on his mind."

And with this charitable view of the situation, Mrs. Spoopendyke sat down to the consideration of her sins and whether she'd better make a false train for her new black silk.

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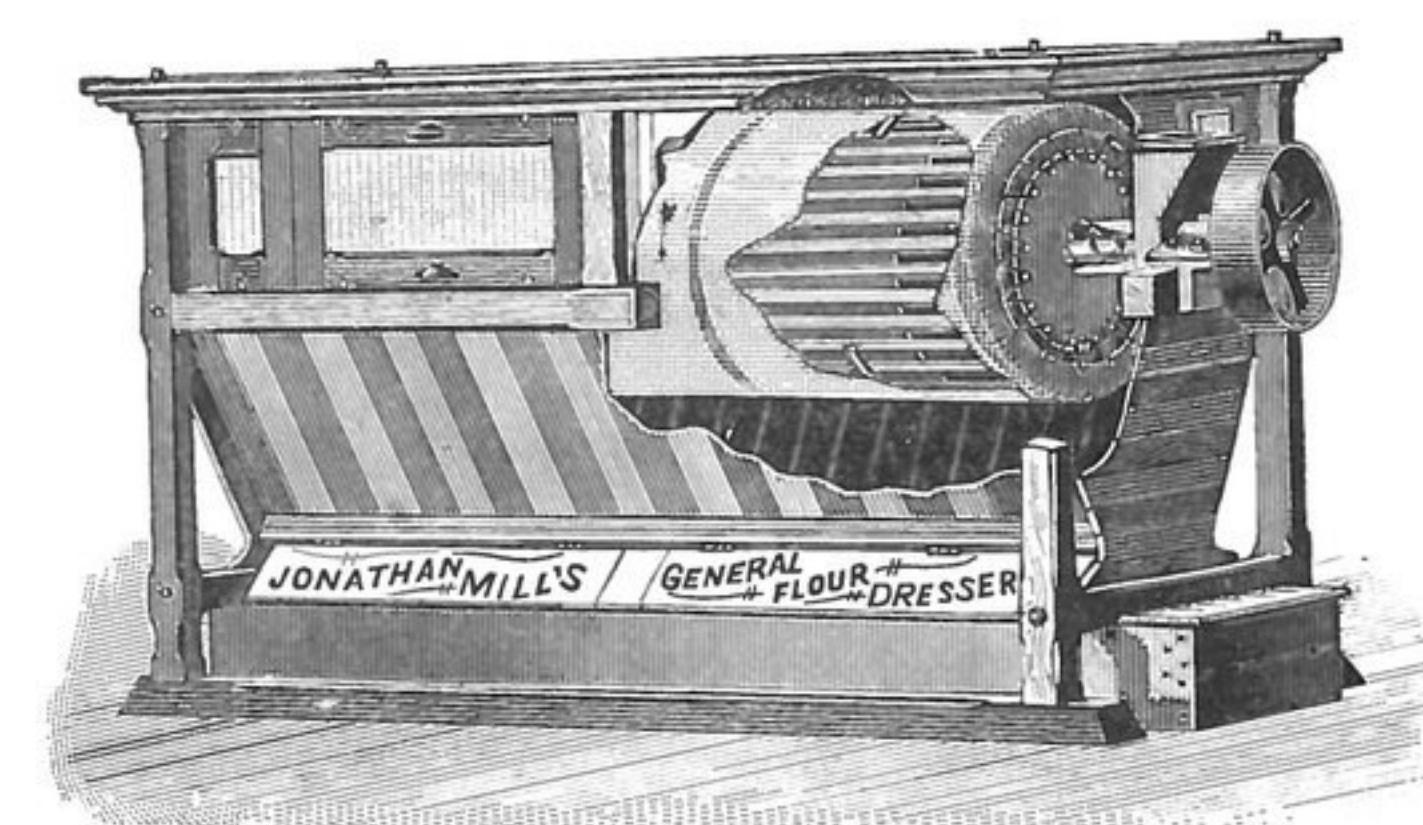
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Office of THE MILLING WORLD,  
Buffalo, N. Y., Feb. 11, 1885.

The wheat market has been dull and lower. The almost general snow storm throughout the country since Saturday added to public and private cables of a dull and stupid character, has been one of the principal weapons of the bears. There was absolutely no life in the cables, and the bulls twisted the advices in vain to find any confirmation of the war stories of last week. The farmers' deliveries in the United Kingdom did show a little falling off last week, but the receipts of wheat at the interior of this country showed a decided increase; and in face of the storms, there has been attempt at good movement, and estimates are current of a large increase in the visible, when the prevailing extraordinary severe weather moderates. There were no exports of wheat from New York on Saturday, and exports for the week were only 300,000 bushels. The stocks, says the Commercial Bulletin, of yesterday, owing the small exports, showed a disappointingly small decrease. All these features exerted a depressing effect on the market; but business was very light and no attack was made on prices until the First Call. It was successful, and later it was repeated, but the second time with less success than the first. The bullish feature of the morning was a report from the "crop oracle of the Northwest;" but as the report was "ancient history" very little attention was paid to it. Near the close about 100,000 bushels of cash wheat were taken for export, and on this price rallied a little. Reports that receipts to-day at primary points were 200 cars less than last Monday and estimates of moderate receipts for tomorrow, together with the demand for export, brought in a few buying orders on the late Board; but it was soon discovered that the reported purchases of wheat for export was for "owners' account," and indicated no foreign demand, and Chicago reported very heavy and dull markets. Traders became sellers and the market closed tame.

The flour market has been dull, with buyers still confining their purchases to small lots. The receipts continue to run light and shipments from mills are also light. There is a fair export demand for medium and low grades or for flour that will sell at \$4 or below; goods above that figure are not wanted. The market for rye flour has been quiet but steady at 3.60 a. 3.85. Buckwheat flour is in moderate demand and the market is steady in tone; \$1.85 a. 2.10 is the range for the general business. For corn goods there is a very moderate demand, but the market is about steady. Millfeed is firm and steady at unchanged prices; track receipts continue light, and offerings of city feed moderate.

#### BUFFALO MARKETS.

**FLOUR**—City ground clear Northern Pacific spring \$4.75@5.25; straight Northern Pacific spring, \$5.25@5.75; amber, \$5.00@5.25; white winter, \$5.00@5.25; new process, \$5.75@6.00; Graham flour, \$4.50@4.75. Western straight Minnesota bakers, \$5.00@5.25; clear do, \$4.75@5.25; white winter, \$5.00@5.25; new process, \$6.25@6.50; low grade flour, \$2.75@4.00. **OATMEAL**—Ingersoll \$5.00; Bannerman's \$5.25; Akron \$5.50. **CORN-MEAL**—Coarse, 90c; fine, \$1.10 per cwt. **RYE FLOUR**—In fair demand \$4.00@4.25. **WHEAT**—Quiet. Sales No. 1 Northern at 92c. cash; 1,200 bu. No. 1 hard Northern Pacific at 98c. and 1,000 bu. do. at 92c., both Feb.; 5,000 bu. do. at 94c. April; 5,000 bu. do. at May; for 5,000 bu. lots 94c. asked, 92½c. b'd cash; 98c. asked, 92½c. bid Feb.; 94c. asked, 98c. b'd March; 95½c. asked, 94c. bid April; 95c. asked, 94½c. bid May; 95c. asked, 98c. bid June; for car-lots 98½c. asked, 98½c. bid; for No. 2 red winter 90c. asked cash and Feb., 91½c. asked March and April; 92½c. May; 98c. June; for No. 1 white 91c. asked cash and Feb., 92c. asked March, 98c. asked, 91c. bid April; 98c. asked, 92½c. bid May; 94c. asked, 92½c. bid June. **CORN**

—Weak and in fair demand. Sales 48 car-loads No. 2 at 46c., and 8 do. No. 3 yellow at 46c.; for 5,000 bu. 46c. asked, 45c. bid Feb. and May; for No. 3, 46c. asked, 45½c. bid on track, for No. 3 yellow 45c. asked Feb. and March; 45½c. asked, 44c. bid May. **OATS**—For No. 2 white 85c. asked, 85c. bid Feb.; 85½c. asked, 84c. bid May; for No. 2 mixed 88½c. asked, 88½c. bid on track. **BARLEY**—Firm. Canadian quoted at 75@85c. State at 60@80c., and Western at 55@70c., as to quality. **RYE**—Choice State 80c., No. 2 Western at 74@75c.

#### FOREIGN EXCHANGE.

Foreign Exchange steady, the demand and supply of bills being moderate. The posted rates were 4.84 a. 4.84½ and 4.87½ a. 4.88. Actual rates were as follows: Sixty days', 4.83½ a. 4.83½; demand, 4.86½ a. 4.86½; cables, 4.86½ a. 4.87; commercial bills, 4.81½ a. 4.82. Continental bills were steady; francs, 5.22½ a. 5.21½ and 5.20 a. 5.19½; reichsmarks, 94½ a. 94½ and 95½ a. 95½; guilders, 40 a. 40½ and 40½ a. 40½. The closing posted rates were as follows:

	60 days.	30 days.
London.....	4 84½	4 88
Paris francs .....	5 20½	5 18½
Geneva .....	5 20	5 17½
Berlin, reichsmarks.....	94½	95½
Amsterdam, guilders.....	40½	40½

#### NOTES.

The chief grain inspector of the Buffalo Merchants' Exchange, reports the following amounts of grain inspected by him at this port on track and out of elevator for the week ending Saturday, Feb. 7, 1885: Fifty three cars of winter wheat, forty-nine cars of spring wheat, 197 cars of corn, seventeen cars of oats, four cars of rye, two cars of western barley.

There is an effort on the part of the Buffalo Merchants' Exchange to secure better elevator accommodations for grain brought in by cars. All the elevators are specially adapted for discharging vessels, and none are of much account when a car is to be unloaded. A committee is now at work on the matter. At the call yesterday President Hedstrom mentioned incidentally of his recent visit to Cleveland, where he found shippers ready to send rail grain here if it could be taken care of properly.

A correspondent of the Alta California insists that farmers can raise wheat in that State at a profit even under the present low prices. After giving his own favorable experience, the writer says: I have just received a statement of cost of cultivation for last year from a farmer whom I have known twenty-five years, who has continuously farmed during that period, which I append: On heavy land, plowing per acre, \$2.00; sowing and harrowing, 50 cents; cost of seed, \$1.50; heading and stacking, \$1.50; threshing, \$1.00; sacking, \$1.00; total per acre, \$7.50; freight to point of delivery, \$1.00; cost per acre, \$8.50. Fifteen hundred pounds per acre sold at \$1.25, \$22.50; profit per acre, \$14.00; less rent at \$1.00 per acre, \$10.00.

THE address of L. S. Coffin, the farmer member of the Iowa Board of Railroad Commissioners, before the railroad committee last night, is an exceedingly valuable contribution to the current subject of railroad legislation. Mr. Coffin's practical experience has led him to the same point reached by the best railroad authorities through study and observation. He deprecates legislation animated by hostility to railroads, and believes that the powers of a commission should be advisory rather than mandatory. He conceives a commission as a sort of court of arbitration between the railroads and the people, and believes that no other power is needed to give effect to its decisions than the power of public opinion made operative by the publicity it is empowered to give the operations of the railroads. Mr. Coffin does not overrate the sensitiveness of railroads to public opinion, but there is no harm in reinforcing this by lodging something more than mere advisory powers in the hands of railroad commissioners. They should at least have the power to enforce their authority in cases of dispute by resort to the courts. The need of such resort would occur rarely. Mr. Coffin points out that in 600 cases before the Iowa commission, the railroads only once refused to recognize its authority.

Even the power to fix rates, which it has been found so mischievous to entrust to a railroad commission, is more dangerous in its potentiality than in its actuality. Commissions have seldom used this power to the real injury of railroads. In Illinois the rates fixed by the commission are higher than those established by free competition in Iowa and Minnesota. The mischief of giving a commission the power to fix rates is that it threatens the stability and value of railroad property by taking its management out of the hands of its owners and putting it in the power of an outside body to derange or destroy it. Capital is sensitive, and railroad stockholders are not likely to submit patiently to such interference when they can find other and more secure investments. The old Iowa law stopped railroad building in that state for several years, and drove all the local railroads into consolidation with foreign corporations. Thoughtful people deprecate the fixing of railroad rates by a commission in the interest of the public more than of the railroads.—Pioneer Press.

A NATIONAL Agricultural Convention is to be held at New Orleans, in connection with the Exposition here, commencing on the 10th inst. The origin of this movement was the National Cotton Planters' Association, at the request not long since of Dr. Loring, U. S. Commissioner of Agriculture. Its "raison d'être" is in the acknowledged fact, that as a section the South is hardly yet abreast of the times in the direction of diversified crops, fertilizing and a hundred other things, from grass culture to labor-saving machinery. It has made very decided advancement in its methods of farming during the past ten years, but there is much still to be learned. The proposed congress, sitting, as it will, within sight of a complete exposition of all the resources, methods, facilities and appliances of the farming interest throughout the world, will be in a position to acquire this information. The benefits of this convention, however, will not be confined to this point. The farmers of the East, North and Northwest have as yet but very imperfect notions of the actual physical and climatic conditions of the South, and will here have an opportunity to inform themselves touching the actual experience of the cotton, sugar, rice and tobacco planters, etc., which must result in mutual advantage.

#### SEEKING INFORMATION

Claude Meeker, an "Enquirer" staff reporter, recently met a minister on a train, and he concluded to improve his opportunity and pick up a few points on church matters, which he felt he might need in his reportorial labors.

"You are a minister of the gospel, I believe," began Claude.

"Yes, sir, that is my calling," replied the reverend gentleman.

"Well, I am a little rusty on church knowledge, and I want to get a few hints,

as it were, for an article on churches I am expected to write for our religious column at Easter-tide," and Claude clothed his face in a saintly gloom.

"Do you desire information respecting the church temporal or the church spiritual?"

"Really, sir, I can't say whether it is the church temperance or spirituous that I must know about. May I ask my questions direct?"

The preacher appeared shocked at something in Claude's speech, but told him to go on.

"Is the church increasing?" continued Claude.

"Oh, yes, everywhere."

"And to what do you attribute it?"

"It is the work of grace."

"Grace?" Claude said inquiringly.

"Yes, sir, grace."

"Grace who?" and Claude took out his pencil.

"What do you mean?" indignantly inquired the minister.

"I beg pardon, I merely desired to know her other name," said the innocent Claude, "but if you don't wish to tell me, of course I won't insist, and we will take up another subject. Now, for instance, I have heard of the elders in the church. Don't the younger men have any chance? It seems to me you would want young blood."

"Why, sir—why," hesitated the startled minister, "you are mistaken. You should know—"

"Of course, I should, of course," interrupted Claude, "but all the same I don't, and the church needs young blood. Then there is the organ of the church. Now, sir, do you think a church should run a newspaper?"

"My dear sir, my—"

"Don't mention it—don't mention it. I knew you would say the Press and the Pulpit should go hand in hand, but while I acknowledge the bible, except possibly the revised edition, is the greatest book published, I still think books and newspapers have separate fields."

"But, sir," expostulated the preacher, "you are mistaken, you—"

"Of course, being an interested party, you would say that, but still I think I am right. However, we will not discuss that issue; I want information."

"Well, you need it," said the preacher, with angry emphasis, getting up and leaving the journalist to talk to the empty seat, and poor Claude looked after him like a man who had been hit in the face with a pew cushion,—Merchant Traveler.

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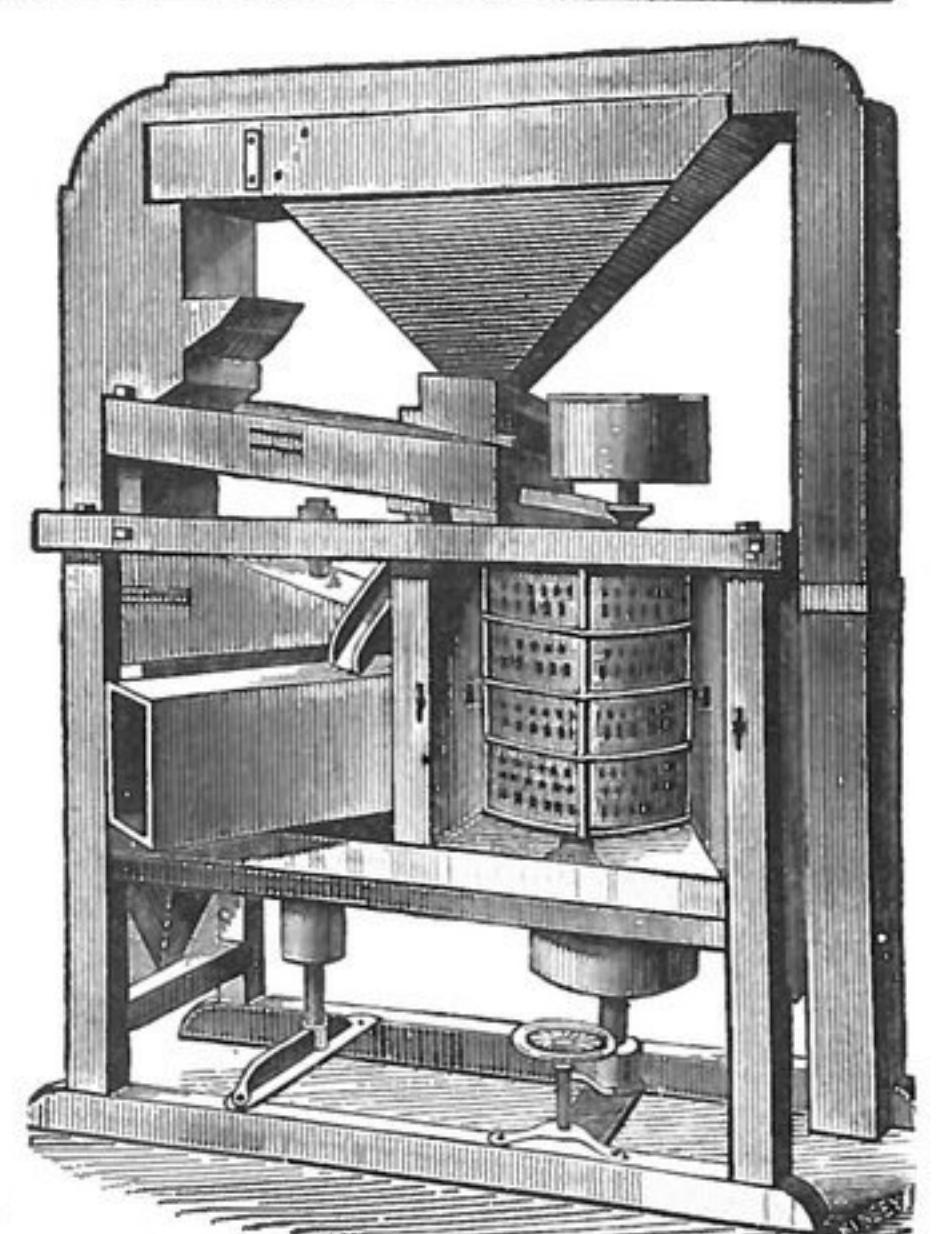
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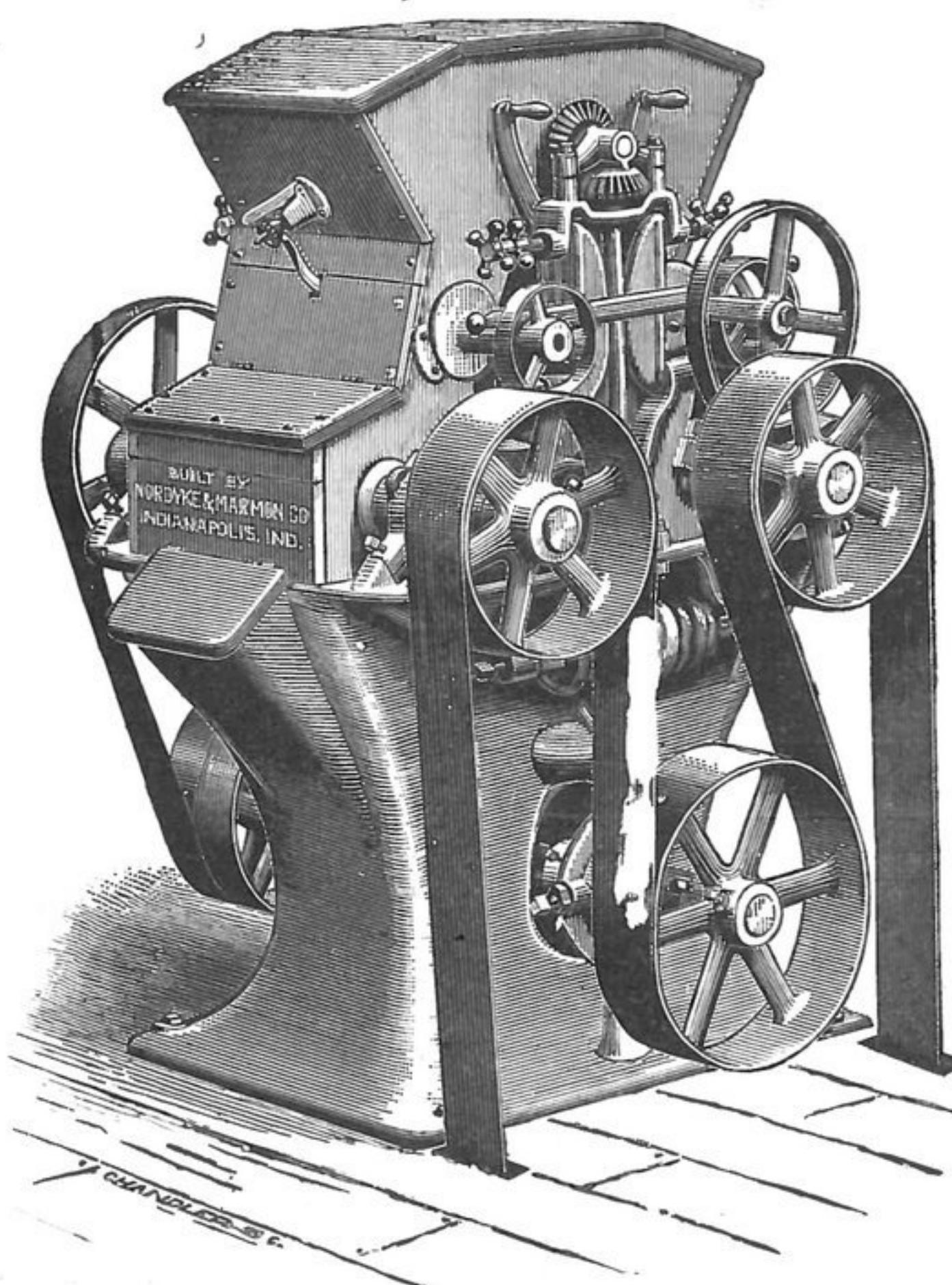


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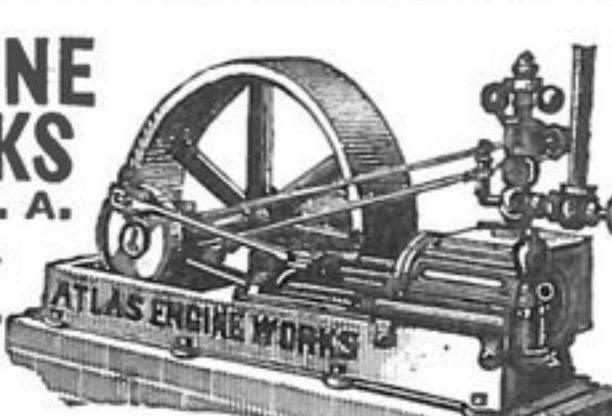
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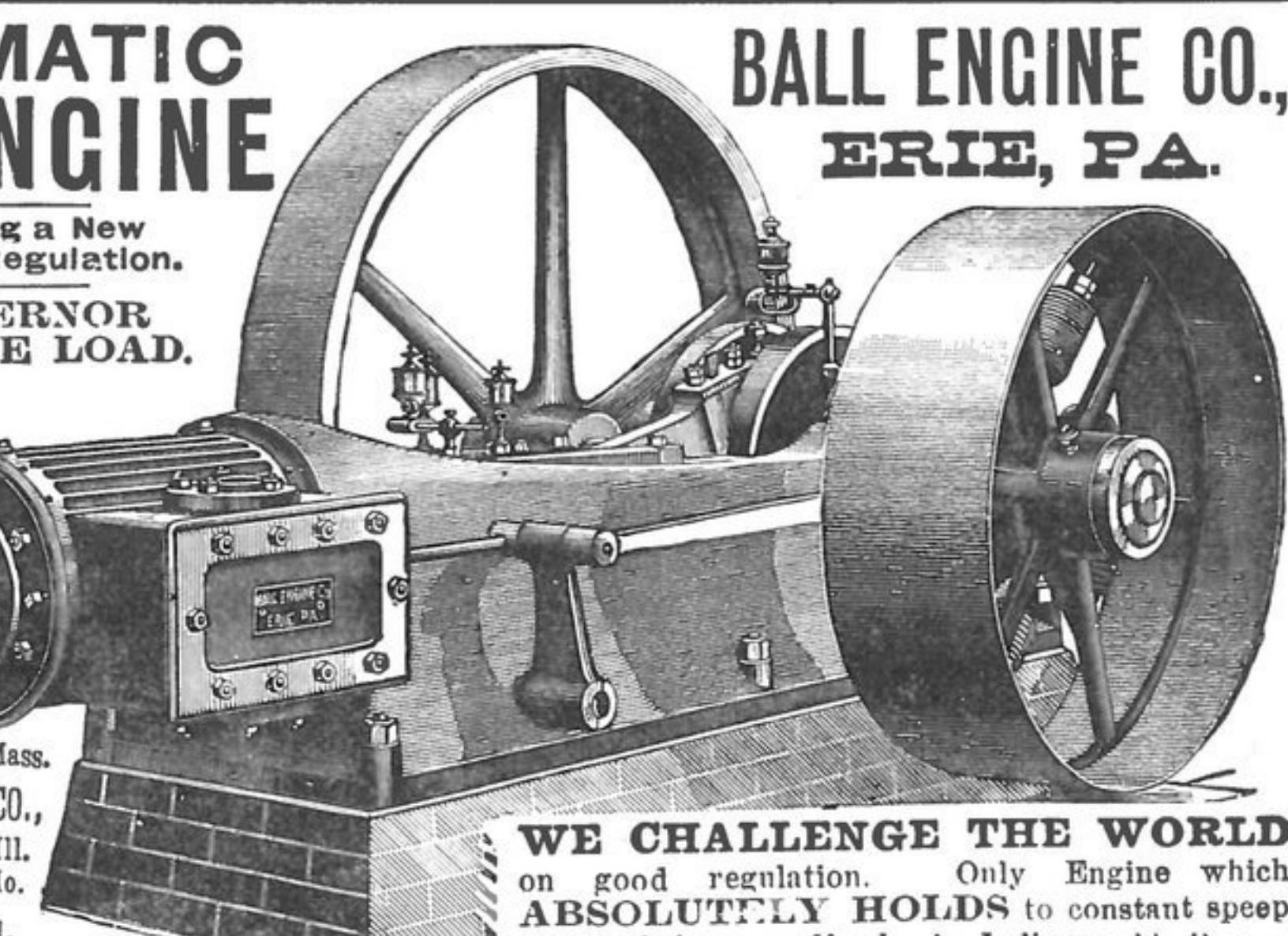
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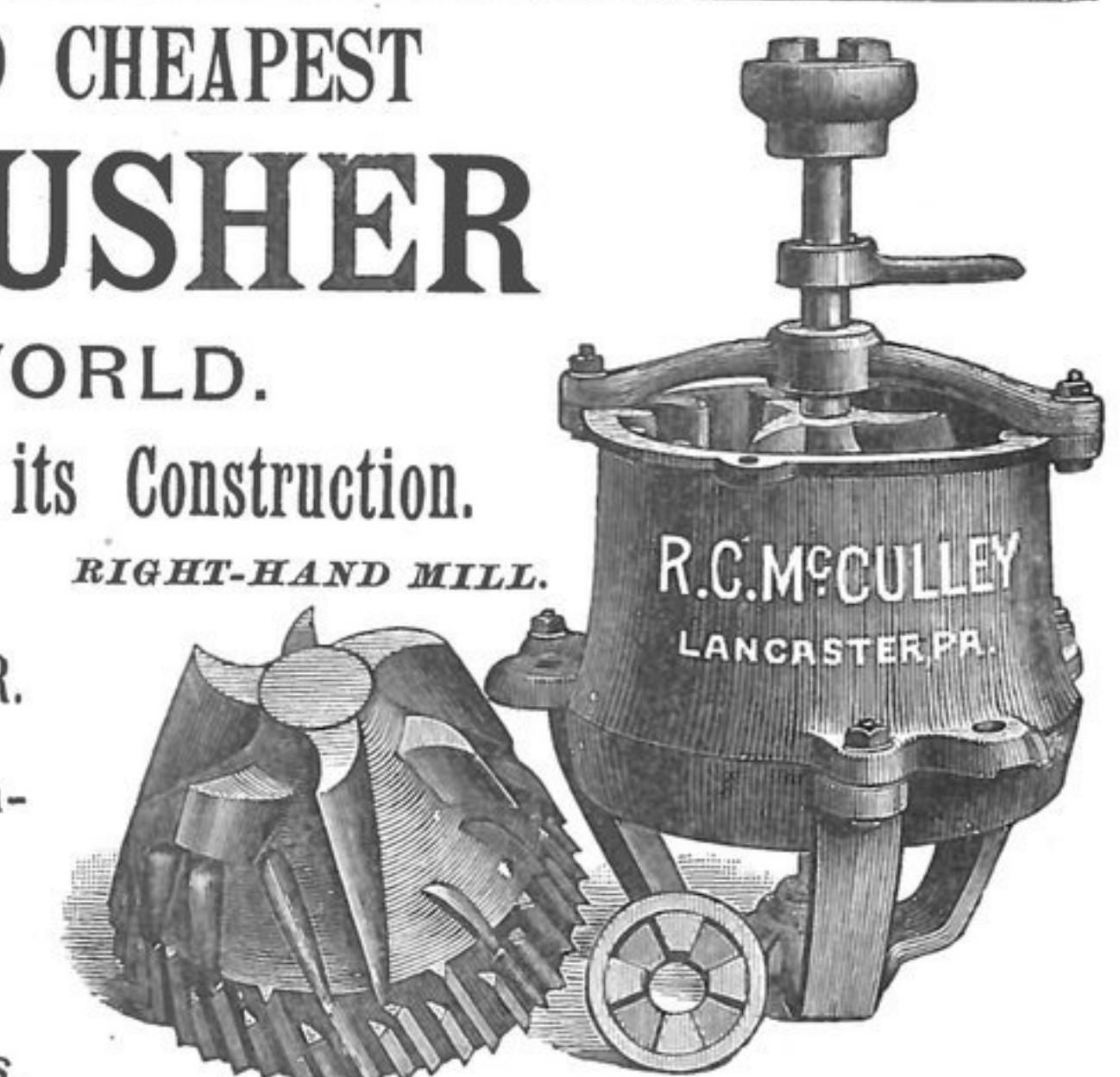
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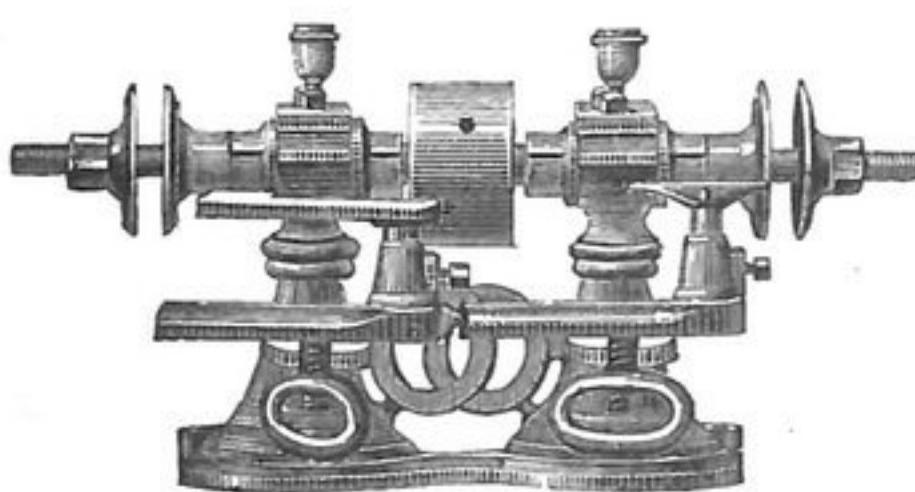
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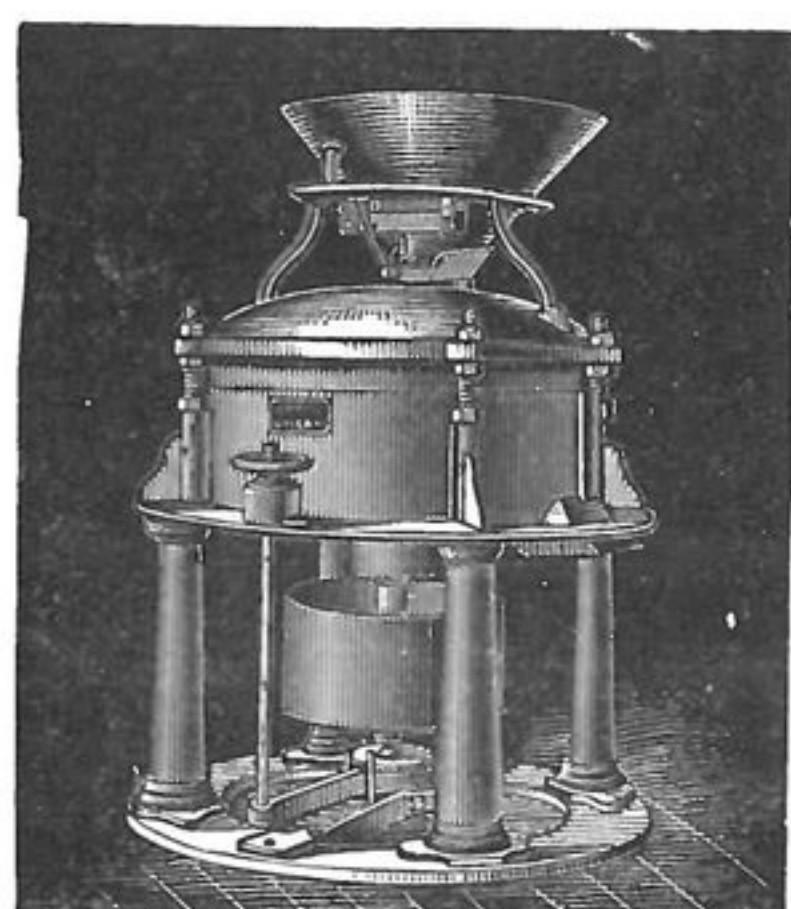
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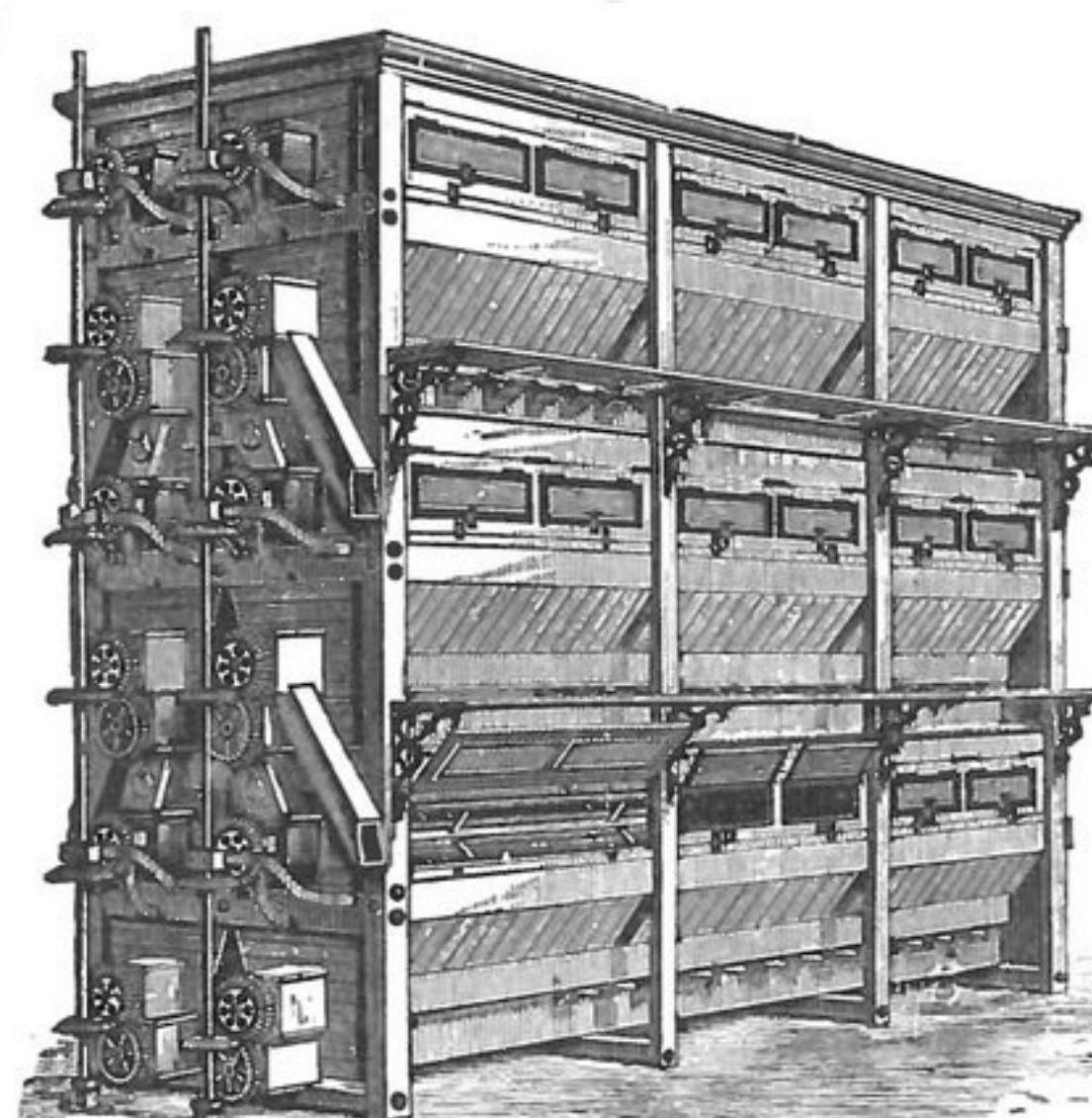
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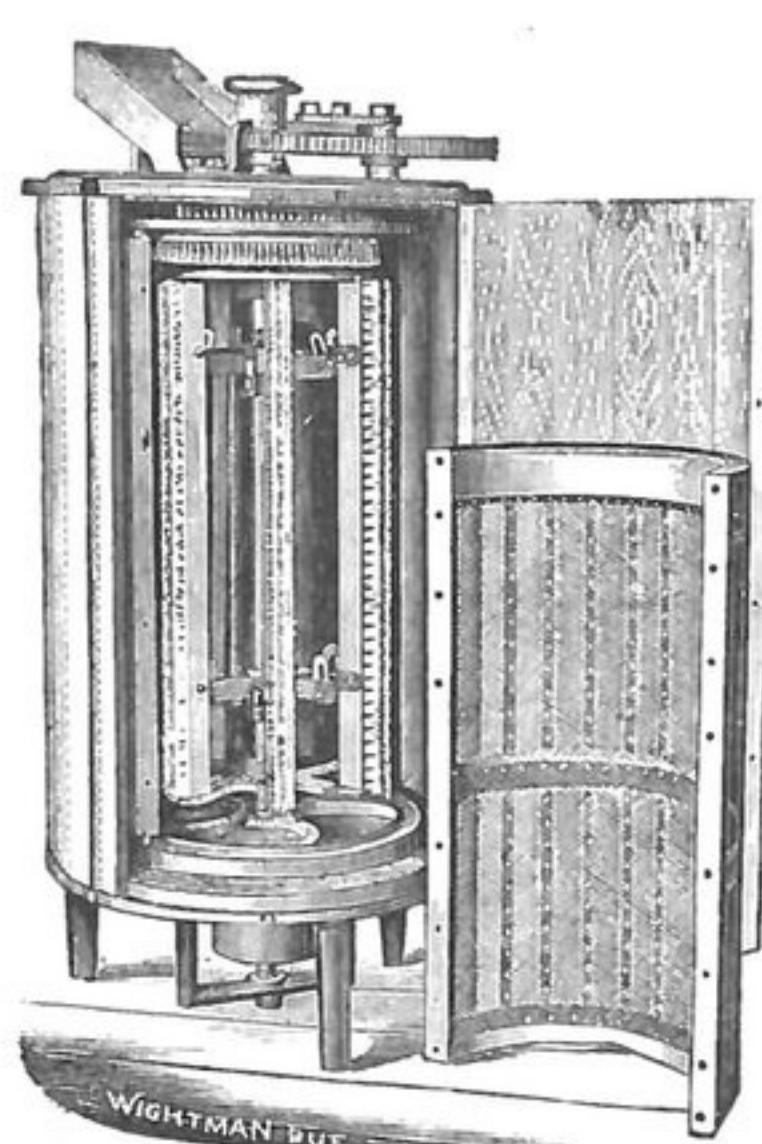
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